

Matthew Yule	2018-05-16	2018-05-17	Enyonam Anyigba	2018-05-17	2018-05-22						
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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+ (%)
2018-05-19 10:25	3	6655.00	Oil Based Mud	9.6	15	N/A	9.8	77/23	Active Pit	29000	0.00
2018-05-20 21:05	3	11910.00	Oil Based Mud	9.8	19	N/A	10.0	75/25	Active Pit	30000	0.00
2018-05-21 20:51	3	15550.00	Oil Based Mud	9.9	16	N/A	9.8	79/21	Active Pit	29000	0.00

Mud Resistivity Record

Date / Time	Run No.	Measured Depth (ft)	Surface Temp (degF)	Surface			BHCT (degF)	Downhole		
				Rm (ohm.m)	Rmf (ohm.m)	Rmc (ohm.m)		Rm @ BHCT (ohm.m)	Rmf @ BHCT (ohm.m)	Rmc @ BHCT (ohm.m)
2018-05-22 17:38	3	9740.00	111.0	100.000	N/A	N/A	201.0	100.000	N/A	N/A

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
3	ATC_SU	12232313	Near Bit VSS	5.93	6.73	7.000	4.330
3	ATC_SU	12232313	Near Bit Inclination	5.93	6.73	7.000	4.330
3	ATC_MWD	12899370	Gamma (single)	2.75	12.90	7.000	3.250
3	ATC_MWD	12899370	Directional (mag)	12.27	22.42	7.000	3.250
3	OnTrak	11783371	Pressure	1.17	9805.20	6.750	3.250
3	OnTrak	11783371	Gamma (double)	2.06	9806.09	6.750	3.250
3	OnTrak	11783371	Resistivity (4tx)	6.10	9810.13	6.750	3.250
3	OnTrak	11783371	Directional (mag)	11.89	9815.92	6.750	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
OTK	OnTrak	Sensor Sub (Inc, Azi, Temp, Azimuthal GR, Res, AP, VSS), OnTrak Platform
BCPM	BCPM	Bi-Directional Communication and Power Module, OnTrak Platform

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 drilling services run 3 utilized a 6 3/4 inch OnTrak service (Multiple Propagation Resistivity and Gamma Ray) behind an 8 1/2 inch rotary steerable assembly to perform a MAD (measurement after drilling) pass from 1760 to 7077 feet MD (1698 to 6650 feet TVD). The data collected during this run was ream logged up to 25 hours after being drilled and presented independent of the drilled log.


Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	7077.00	8.500	3	The interval from 7077 to 16883 feet MD (6650 to 6880 feet TVD) was not logged due to sensor to bit offset at TD

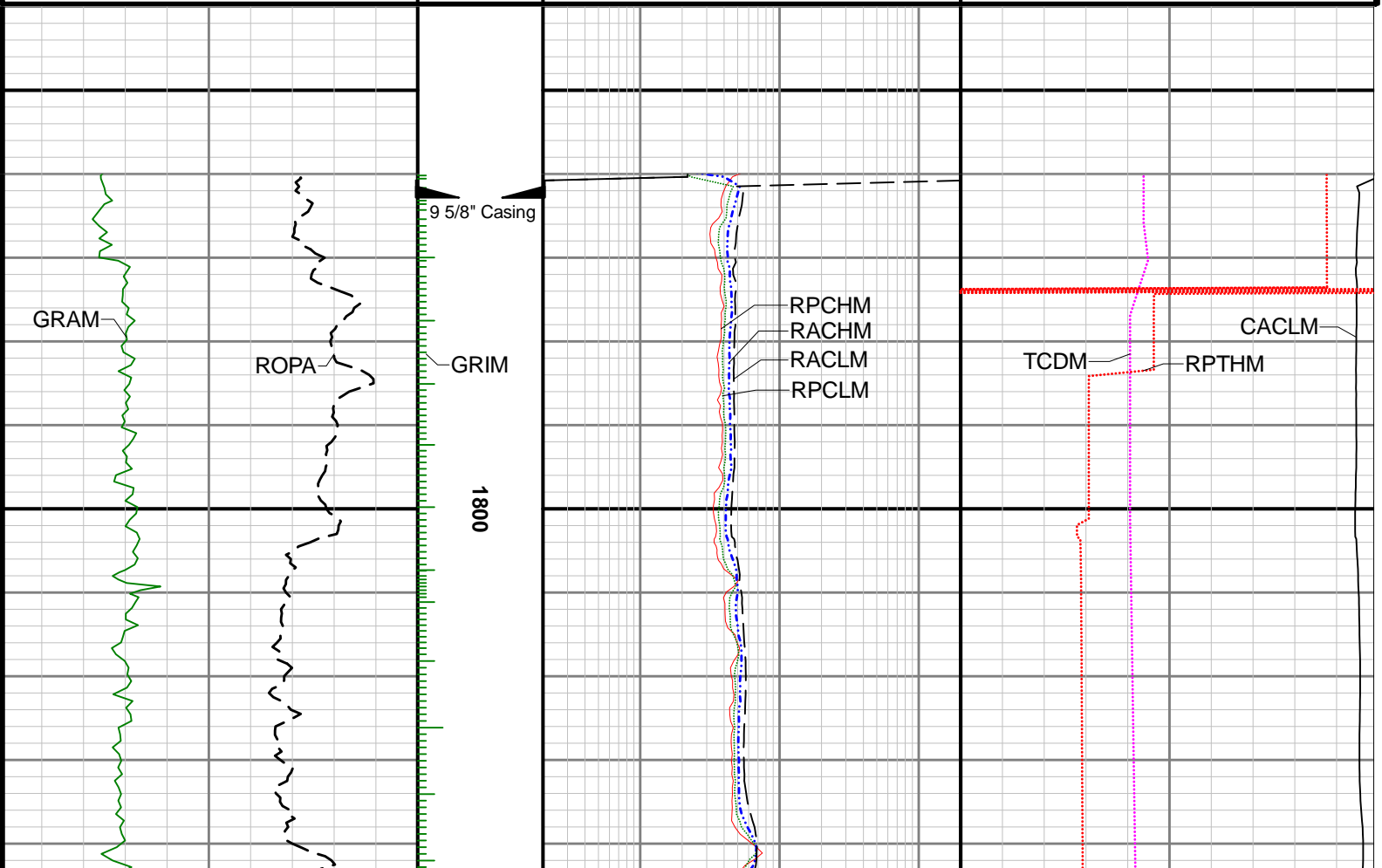
Curve Mnemonics

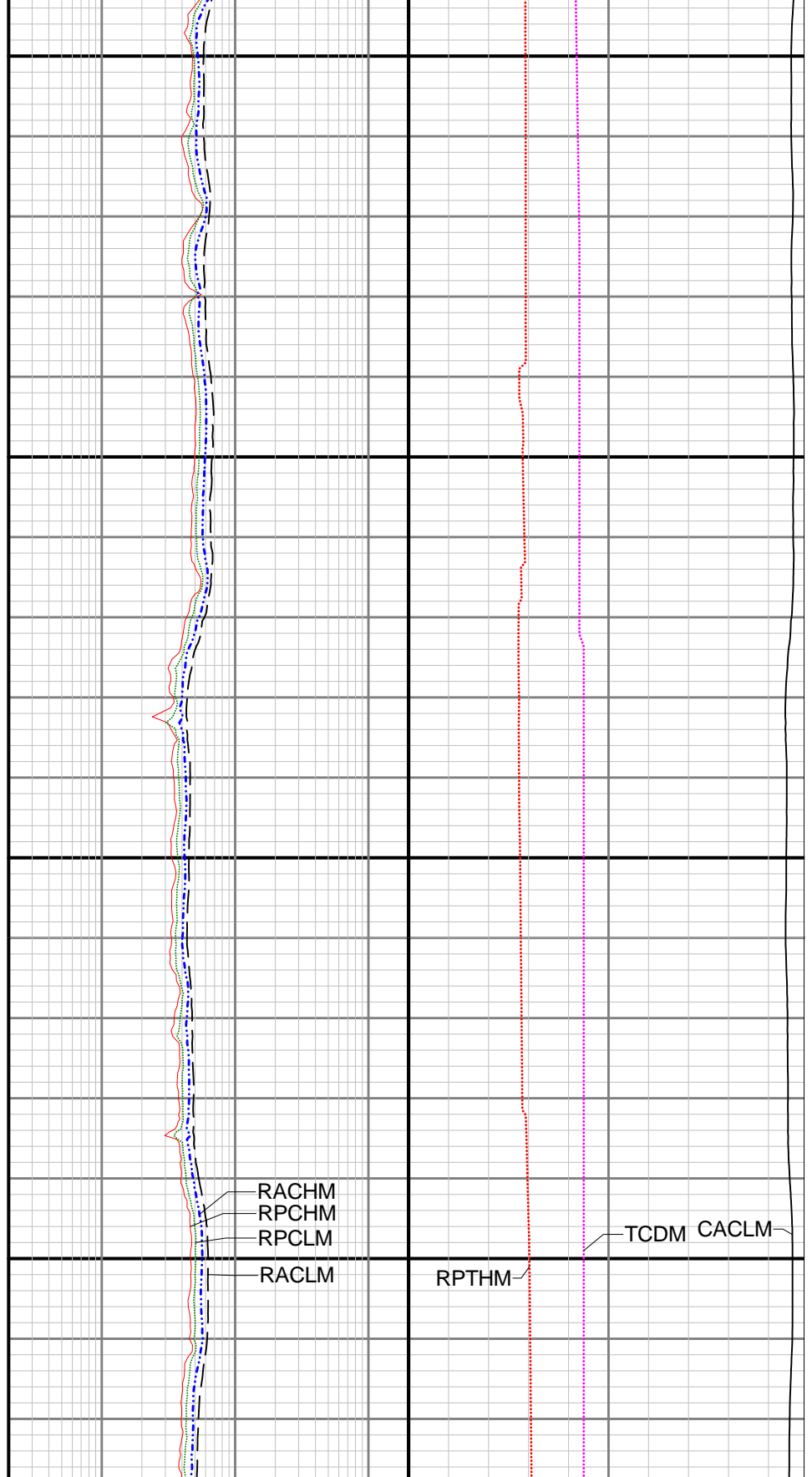
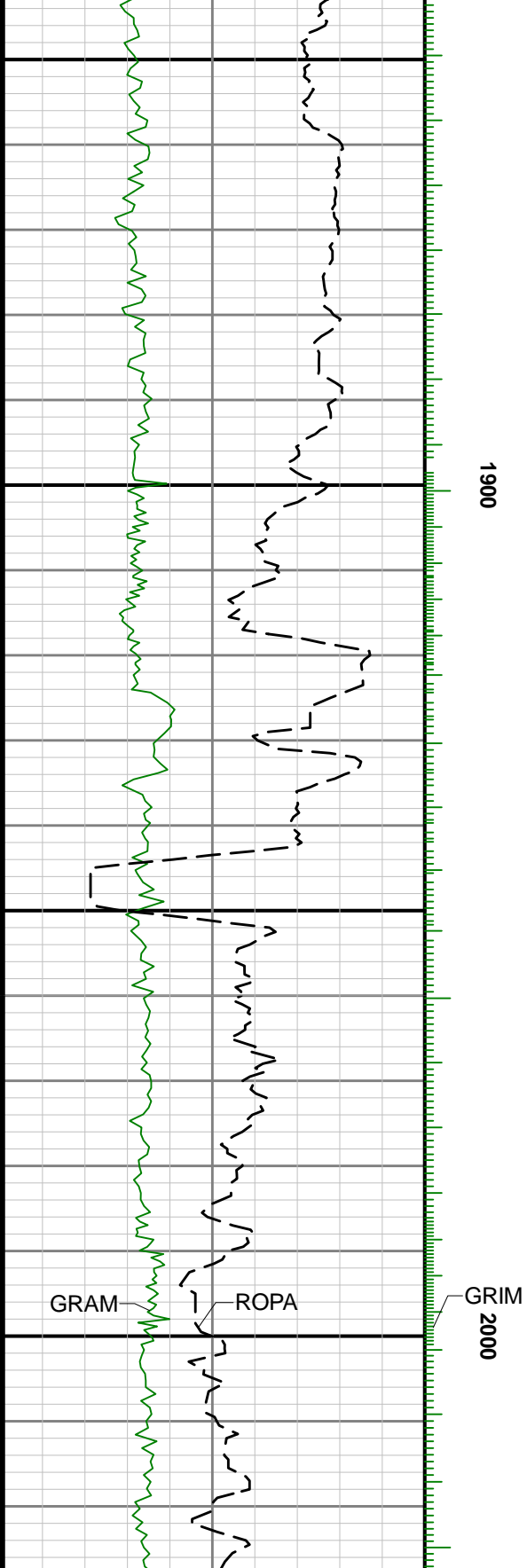
Presented Curves	Description	Units
CACLM	Conductivity Attenuation - Corrected - 400kHz	mmho/m
RACHM	Resistivity Attenuation - Corrected - 2MHz	ohm.m
RACLM	Resistivity Attenuation - Corrected - 400kHz	ohm.m
RPCHM	Resistivity Phase - Corrected - 2MHz	ohm.m
RPCLM	Resistivity Phase - Corrected - 400kHz	ohm.m
RPTHM	Resistivity Time Since Drilled	min
TCDM	Downhole Temperature	degF

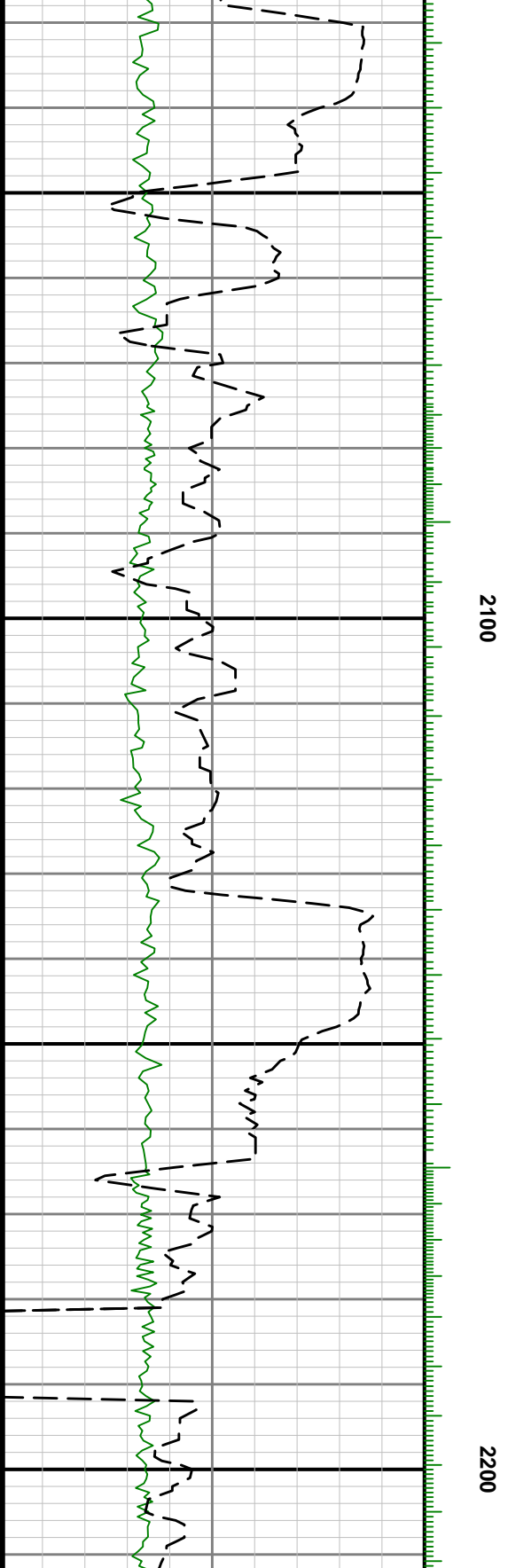
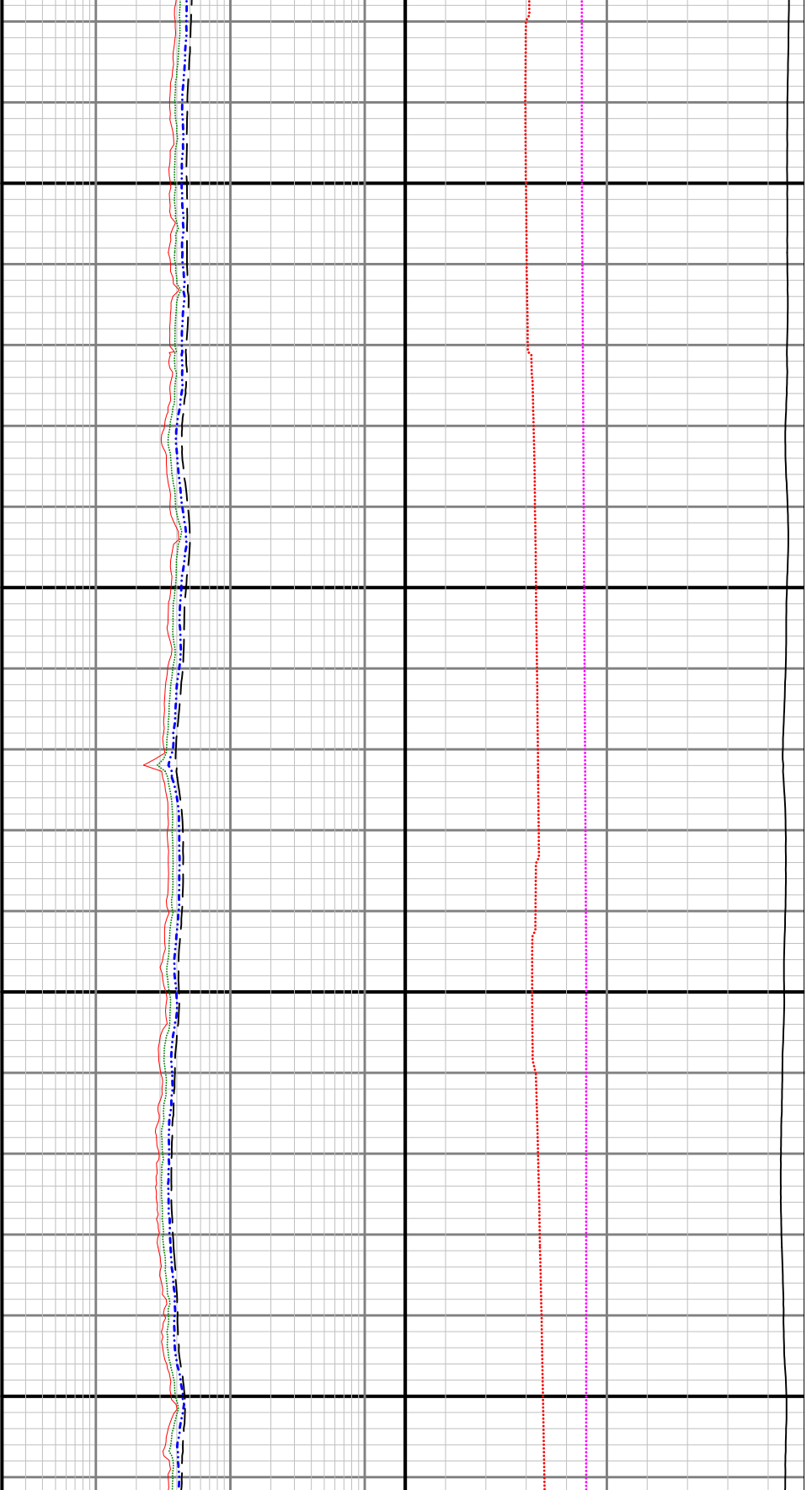
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
GRAM	Gamma Ray - Apparent - Memory 0.5 ft Average	API
GRIM	Gamma Ray - Data Point Indicator - Memory	unitless

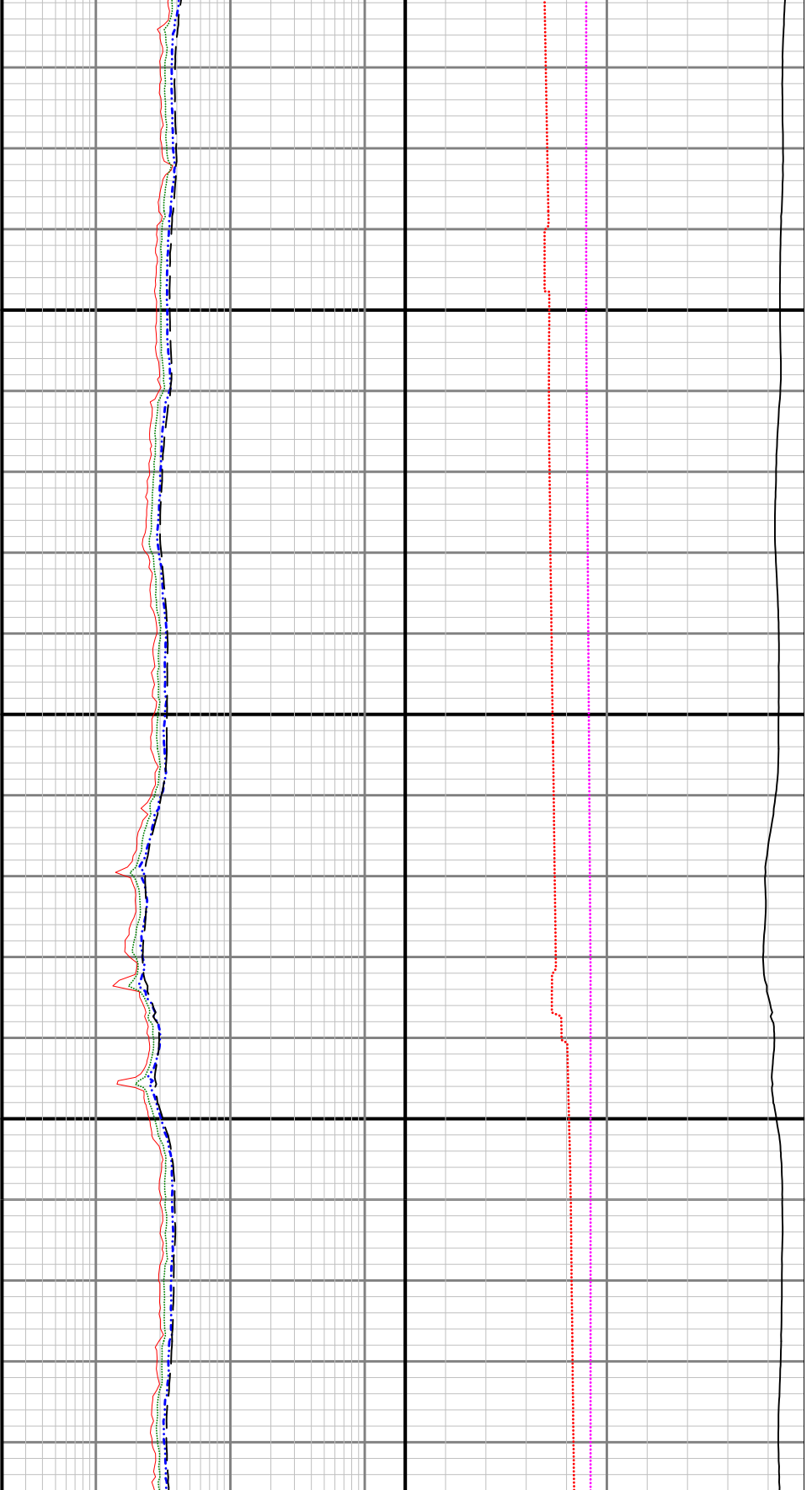
<div> <div> <div>BAKER HUGHES</div> <div>a GE company</div> </div> <div>  </div> </div>	Company	Verdad Oil and Gas Corporation			
	Well	Helen 24-3H			
	Interval	Date From:	2018-05-16 04:02	Top:	1760.00 ft
		Date To:	2018-05-22 05:02	Bottom:	7077.00 ft
	Created	2018-05-22 20:54:21			

Gamma Ray - Apparent 0.5 ft Average [GRAM]	MD 1:240 feet	Resistivity Phase - Corrected - 2MHz [RPCHM]	Conductivity Attenuation - Corrected - 400kHz [CACLM]
0 300		0.2 200	4000 0
API		ohm.m	mmho/m
Depth Averaged ROP 3 ft Average [ROPA]		Resistivity Phase - Corrected - 400kHz [RPCLM]	Downhole Temperature [TCDM]
1200 0		0.2 200	0 250
ft/h		ohm.m	degF
True Vertical Depth [TVD]		Resistivity Attenuation - Corrected - 2MHz [RACHM]	Resistivity Time Since Drilled [RPTHM]
8000 6000		0.2 200	0 600
ft		ohm.m	min
		Resistivity Attenuation - Corrected - 400kHz [RACLM]	
		0.2 200	
		ohm.m	

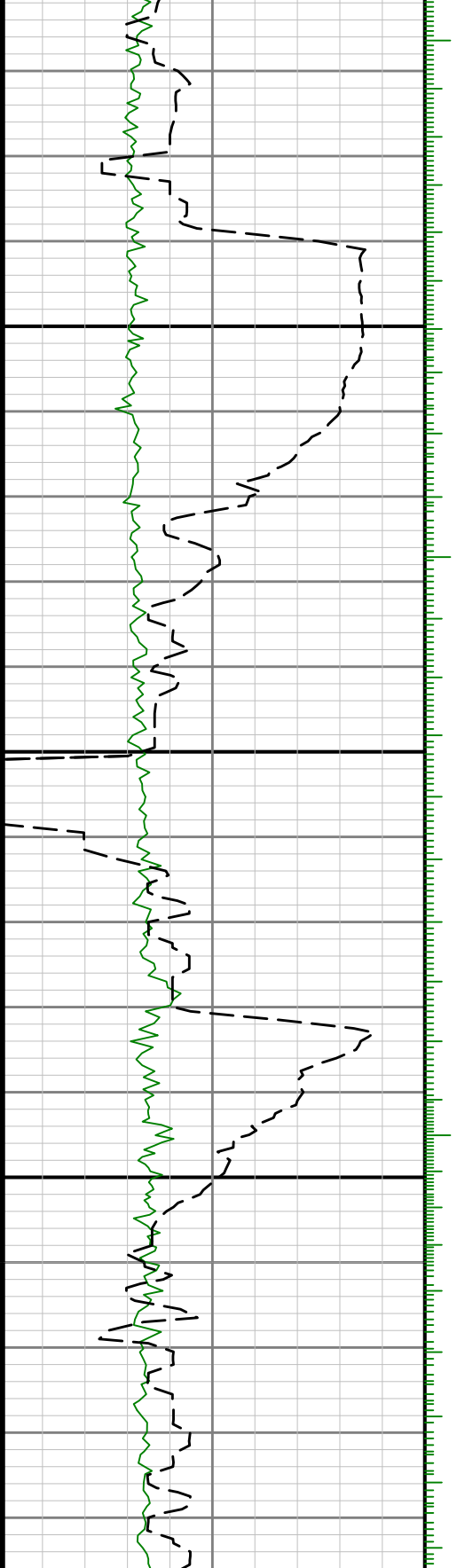


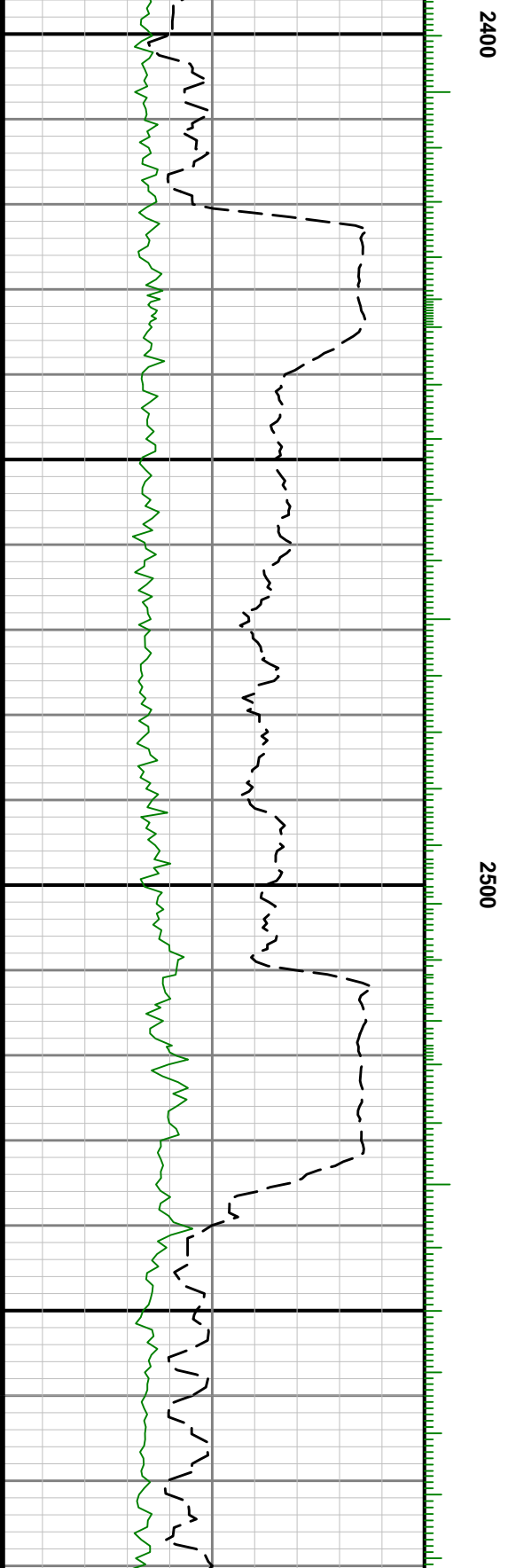
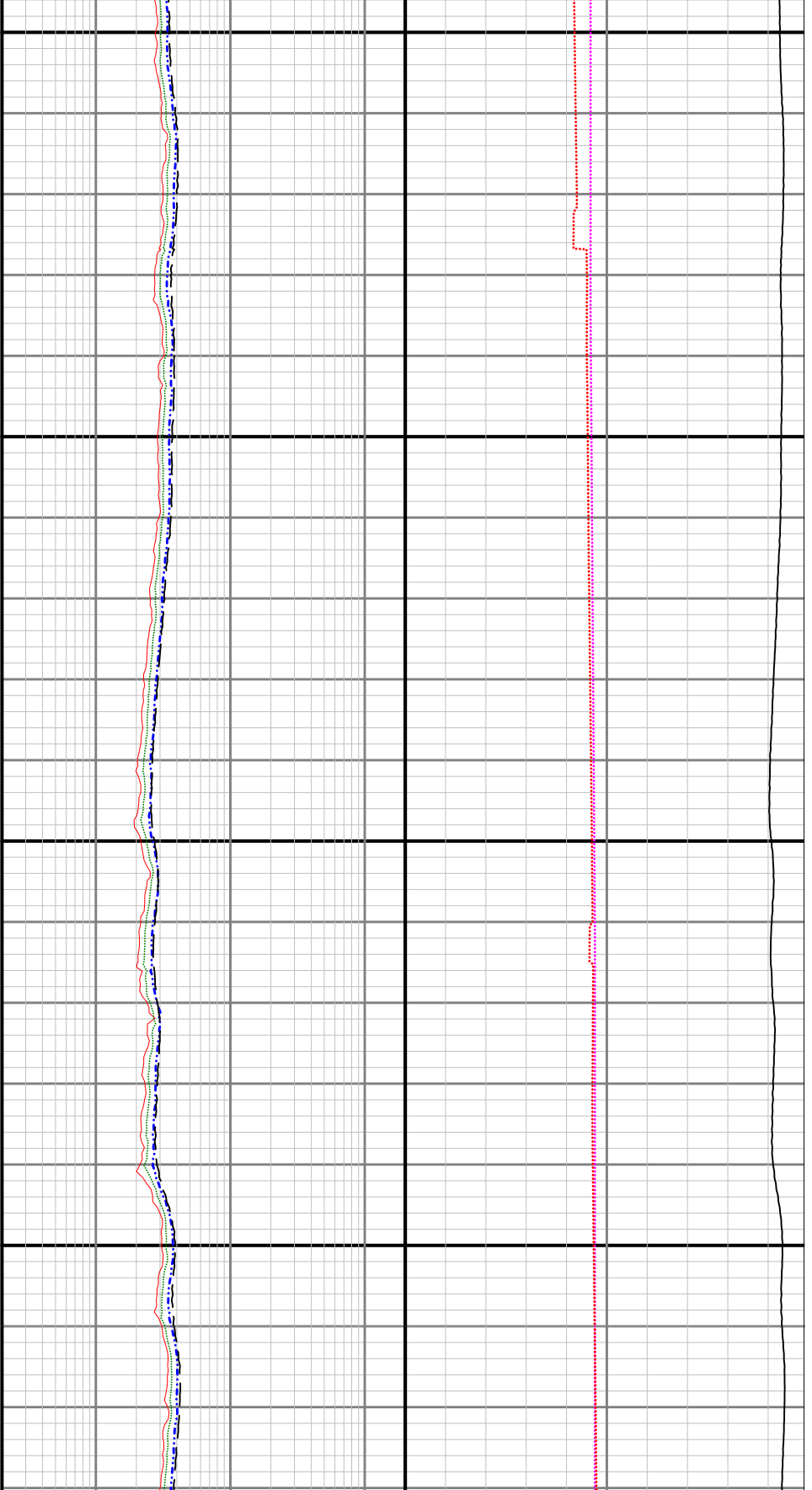


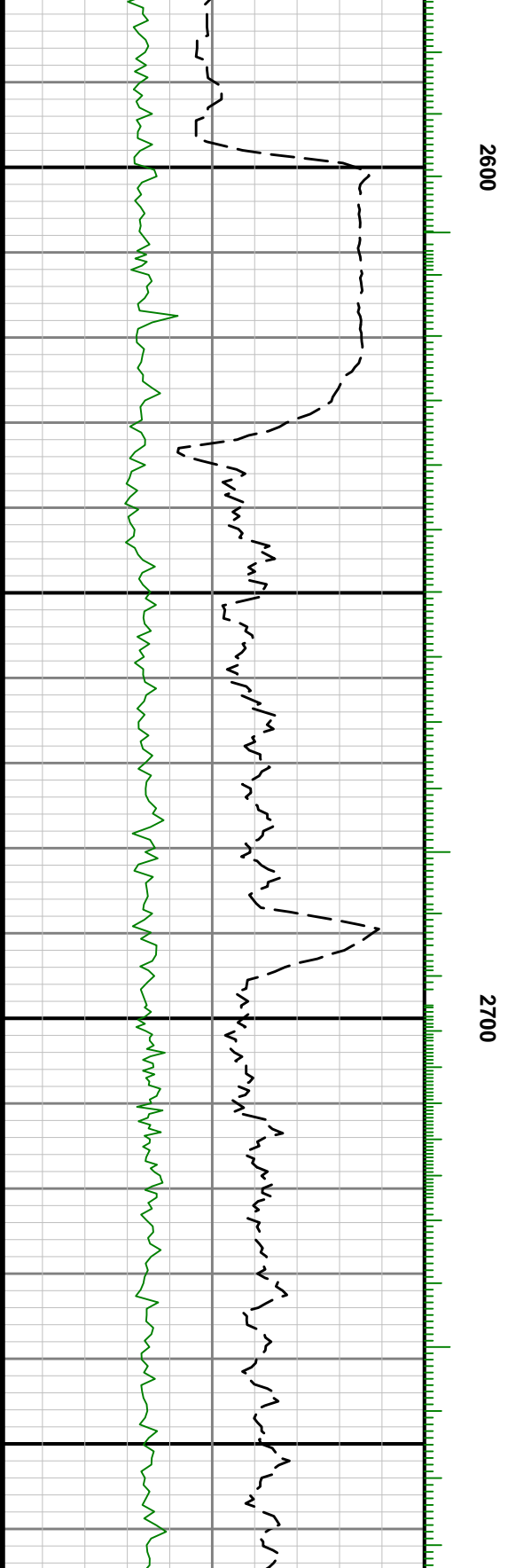
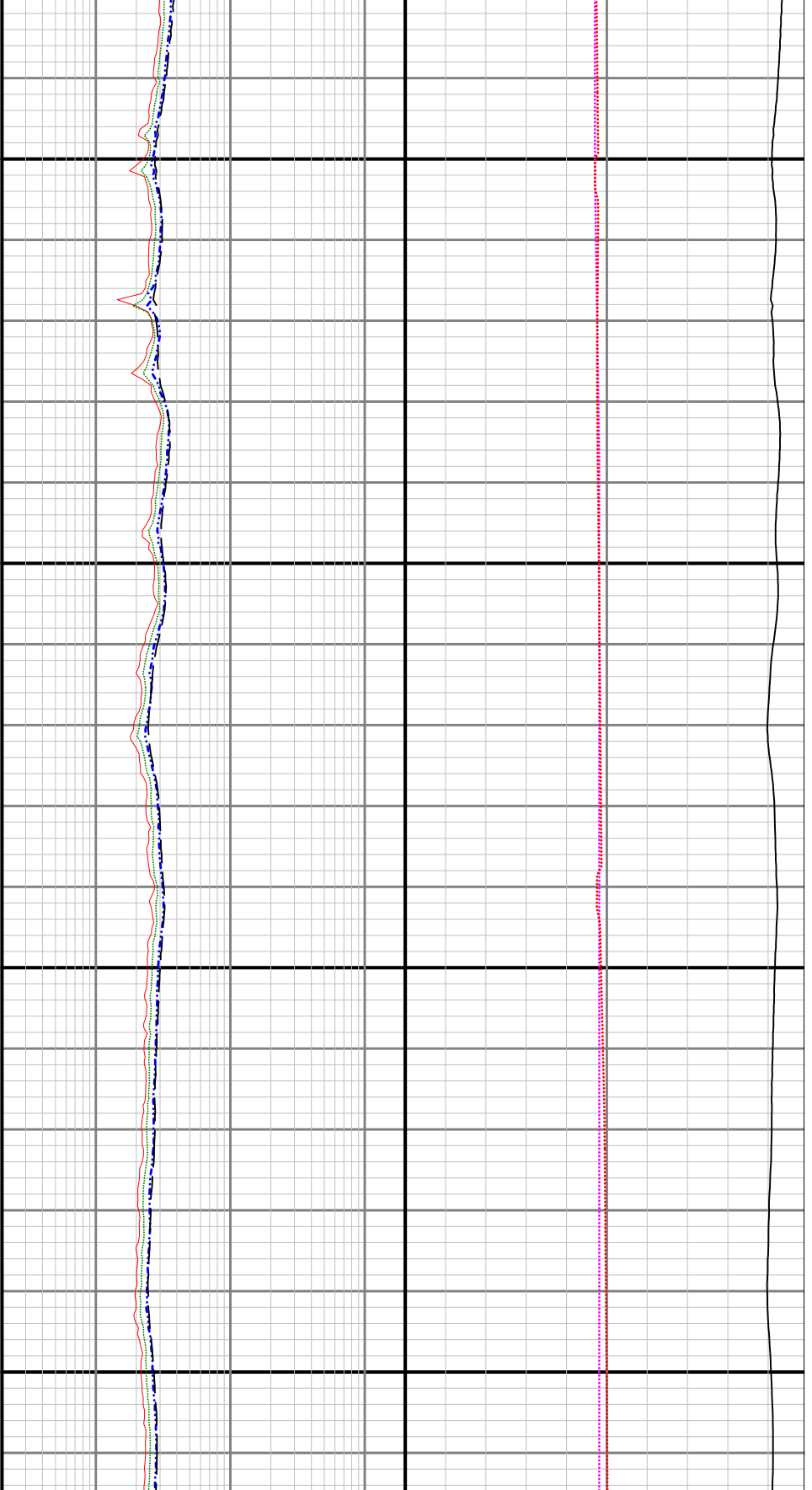


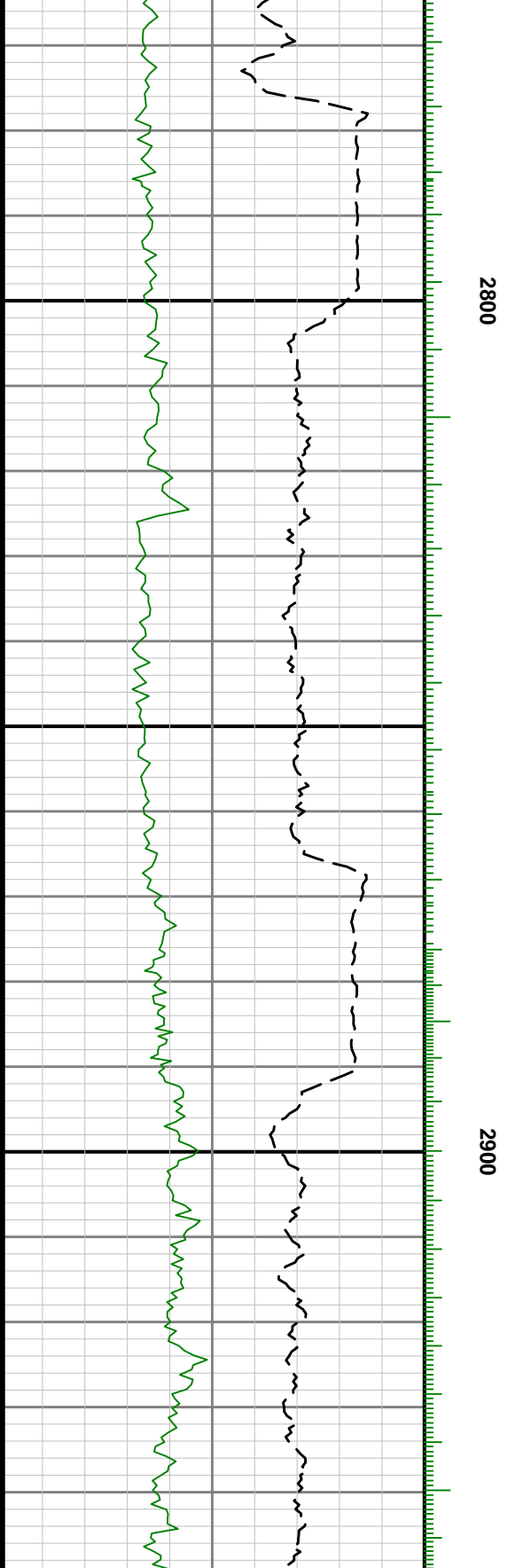


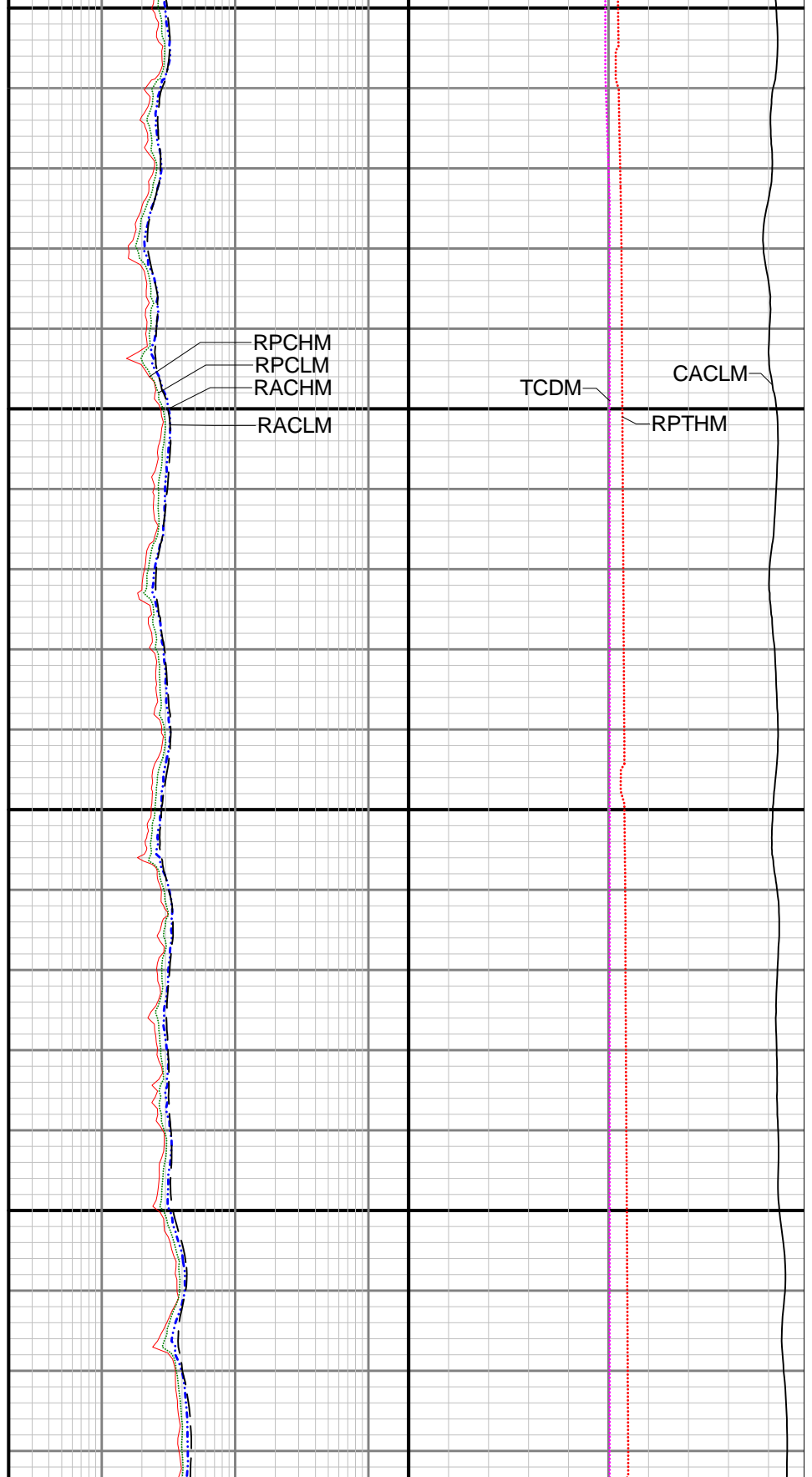
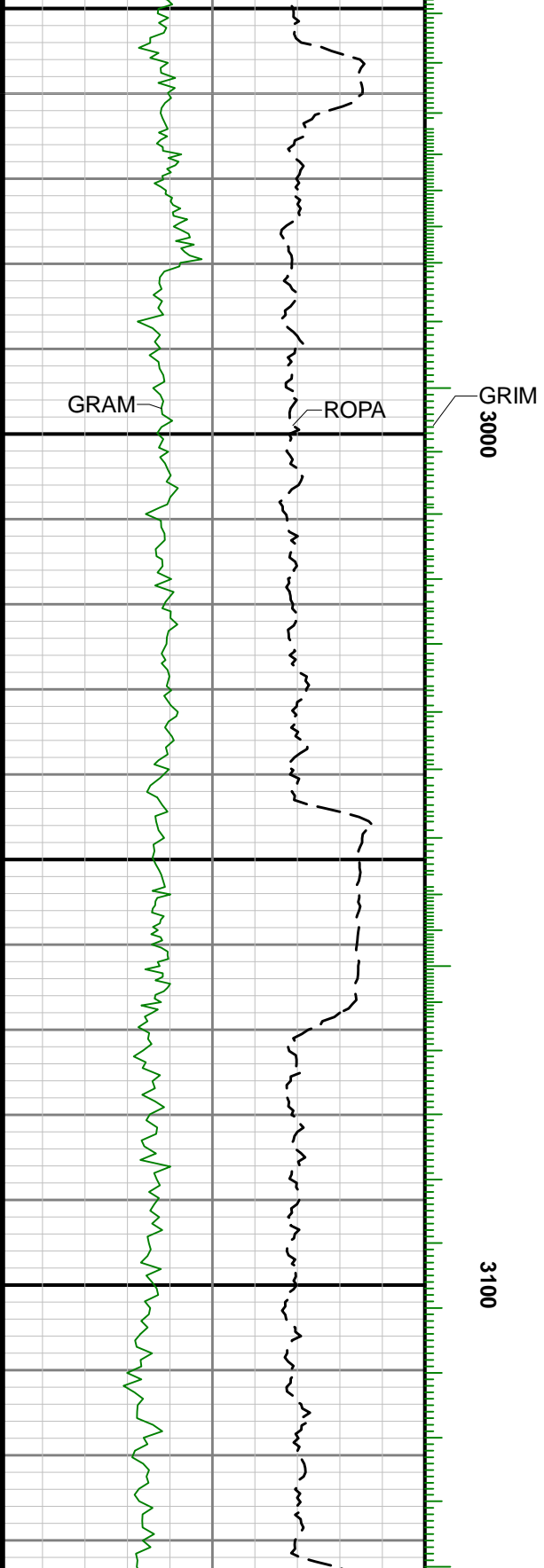
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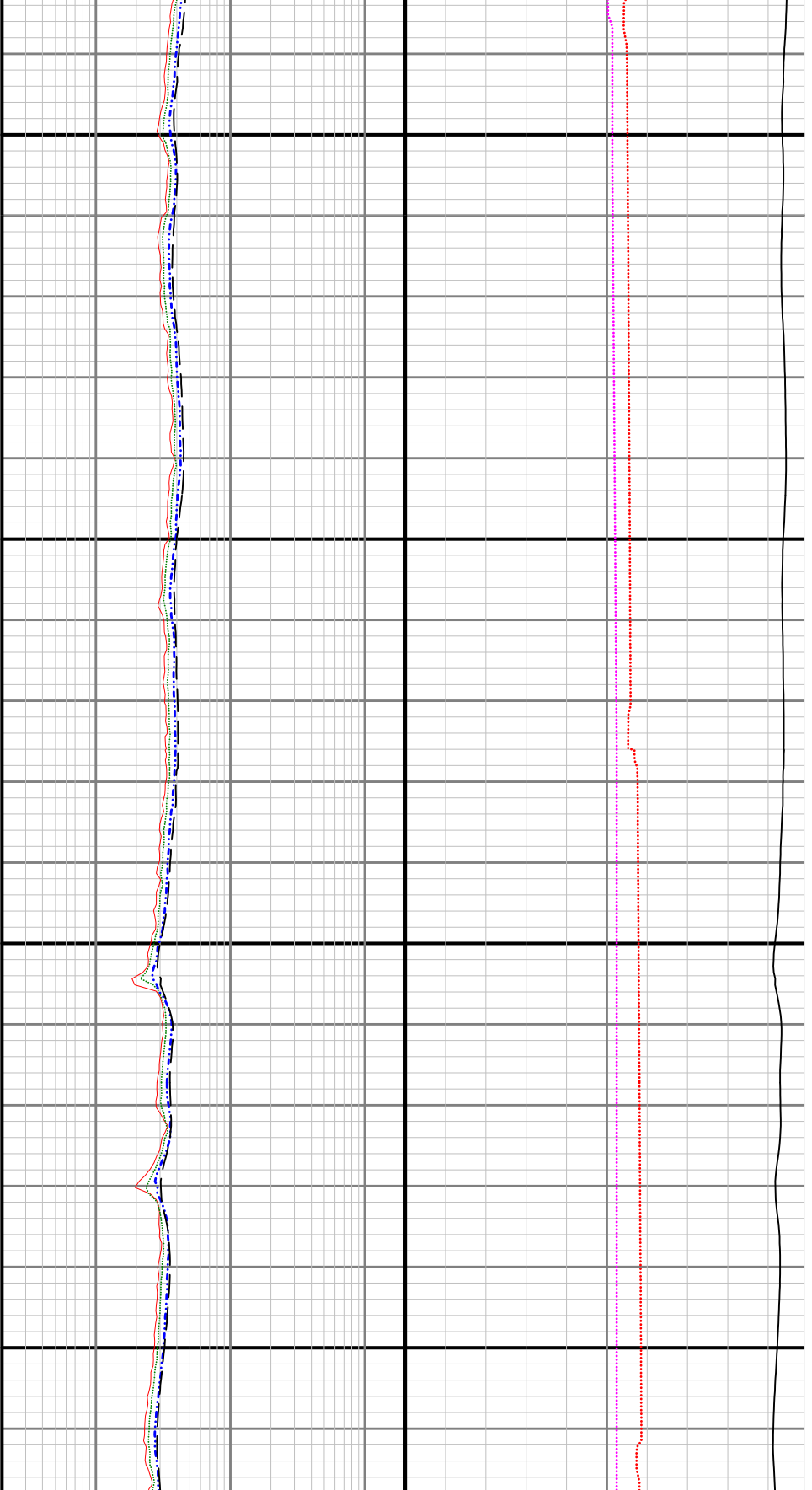


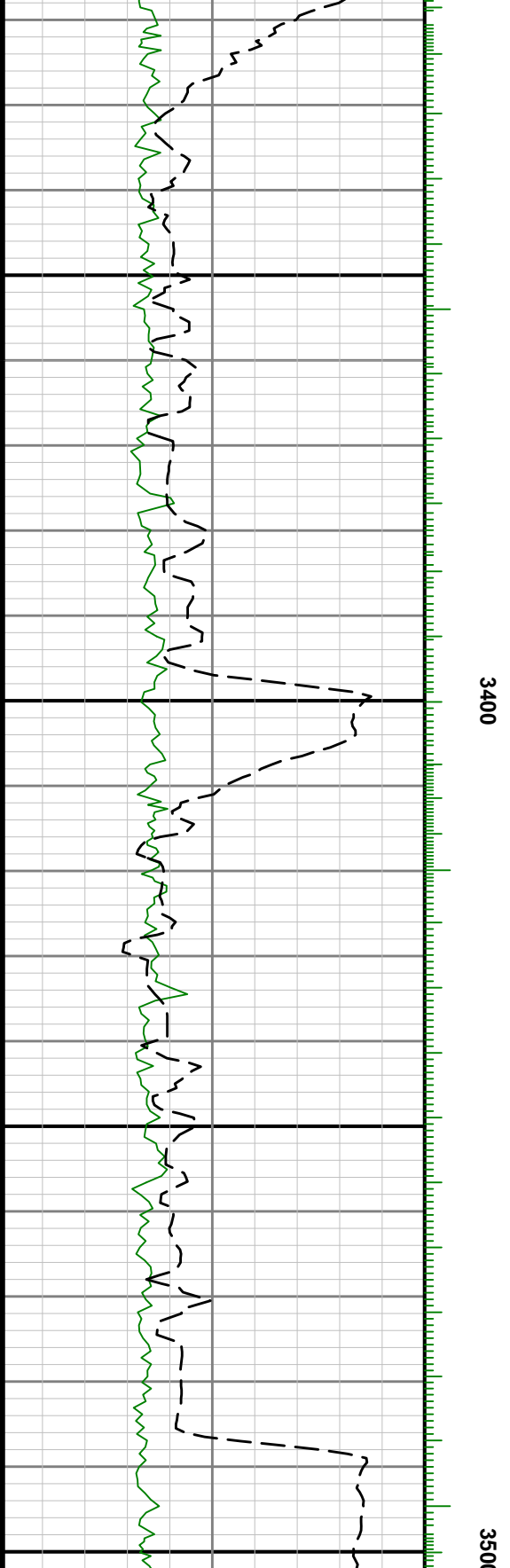
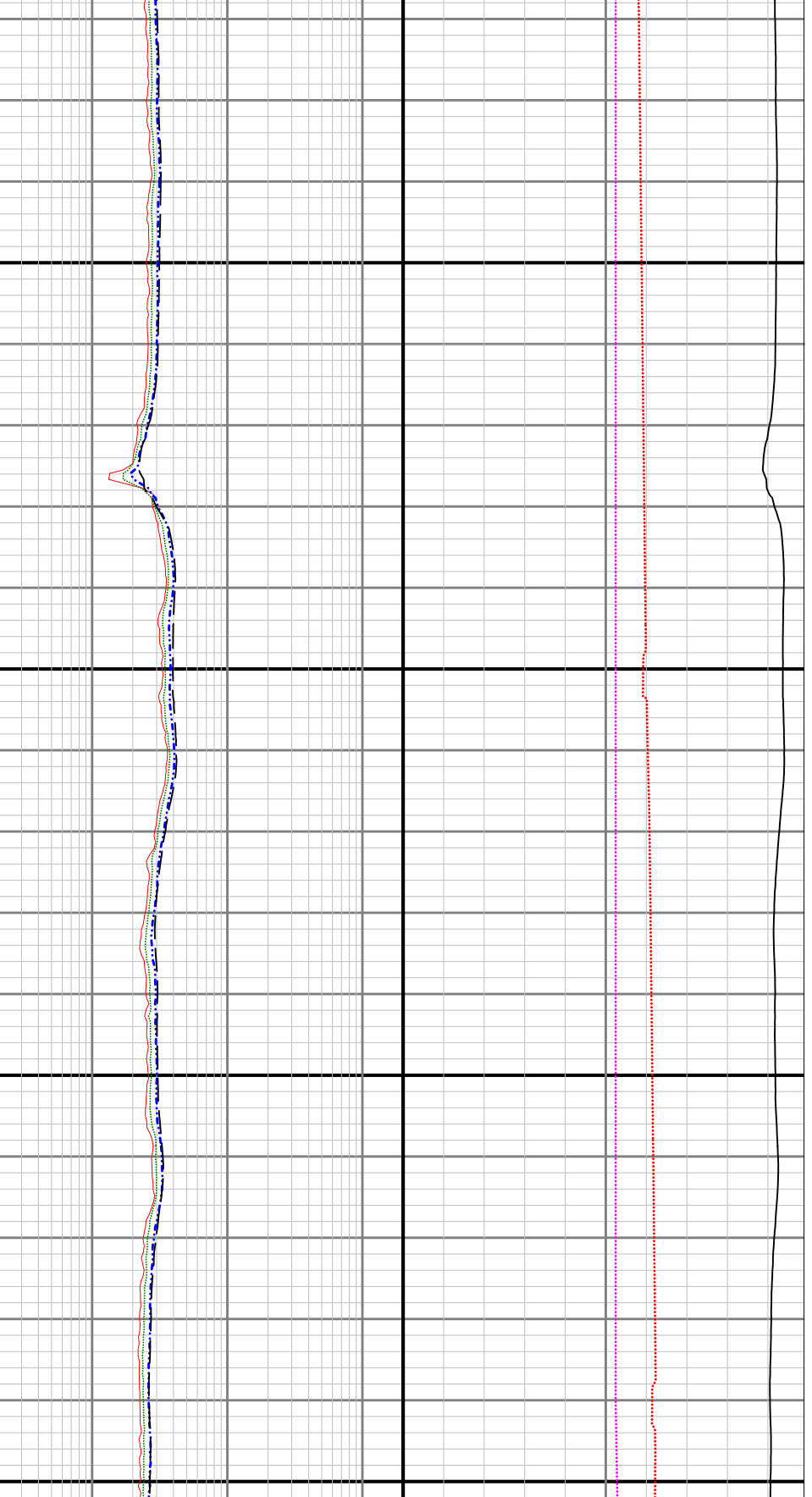


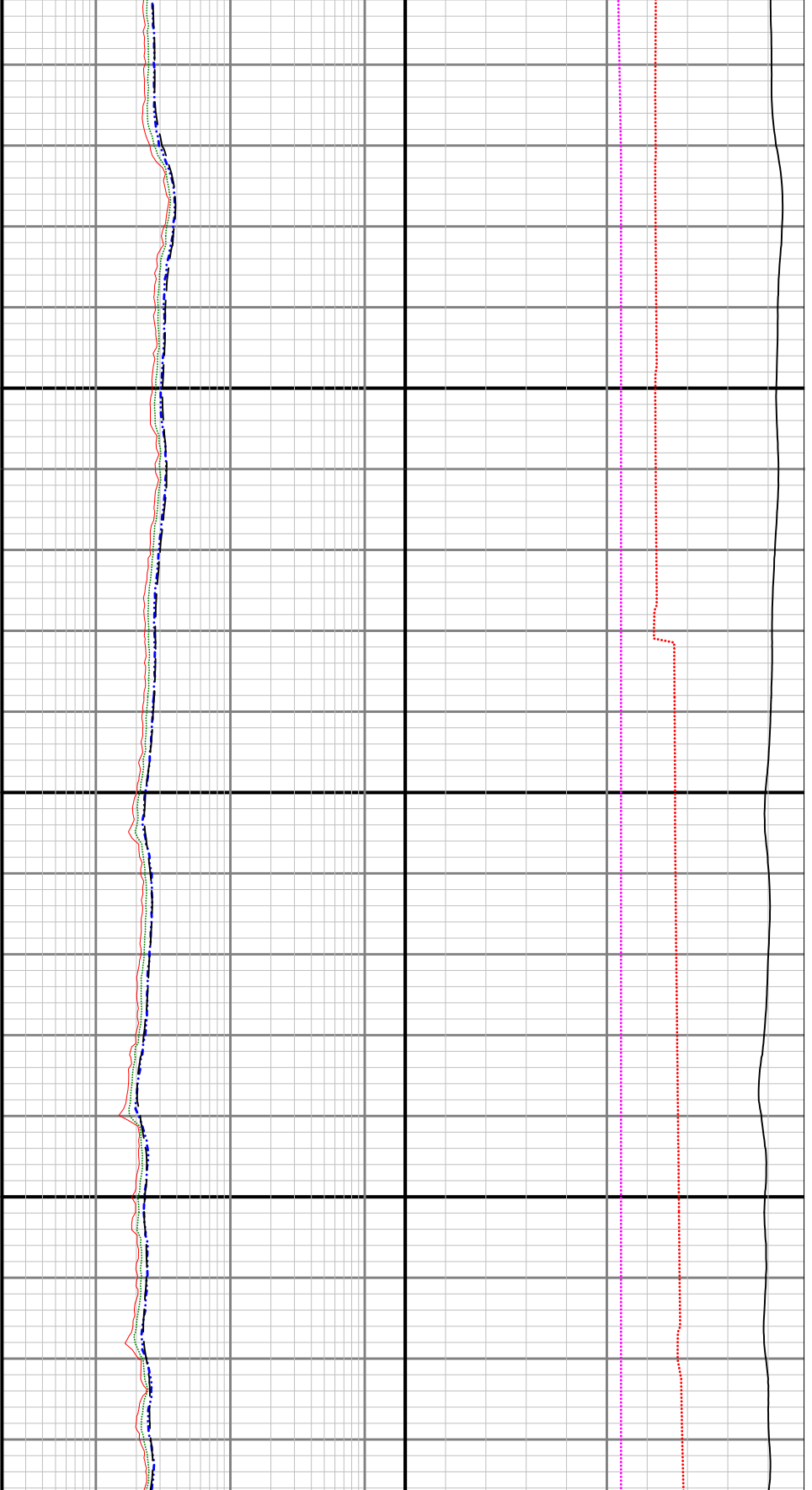




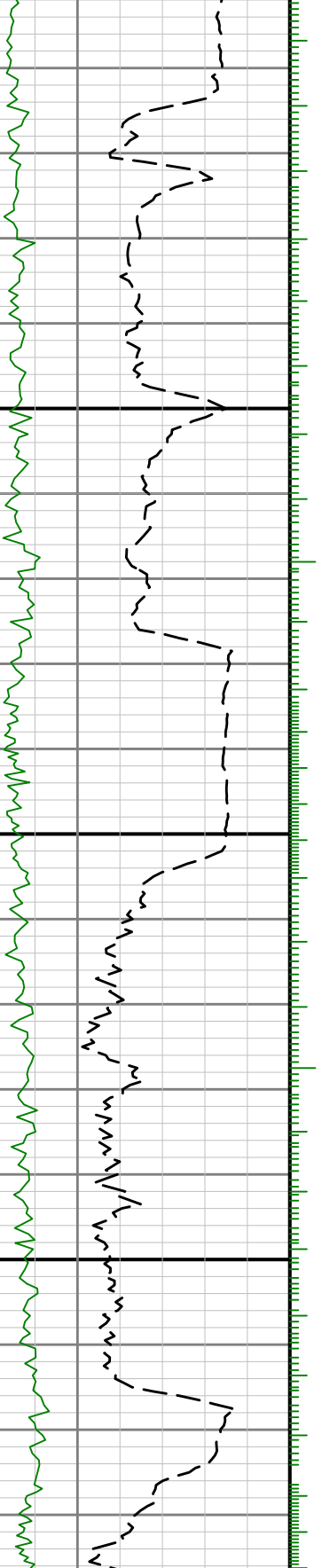


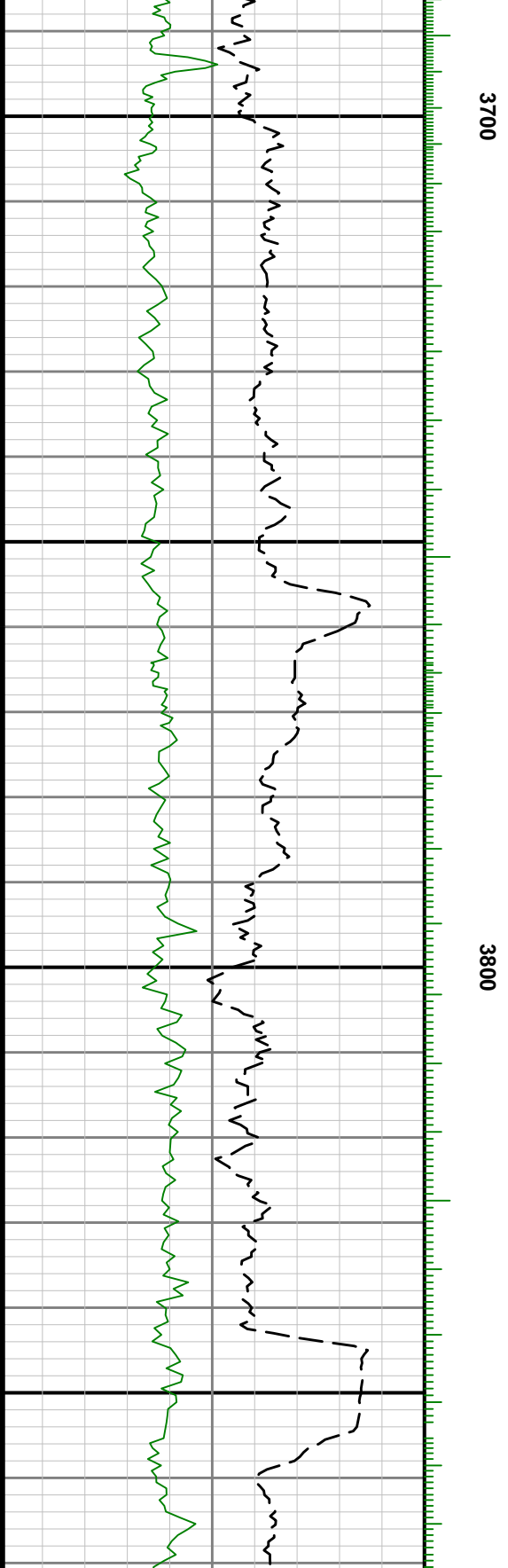
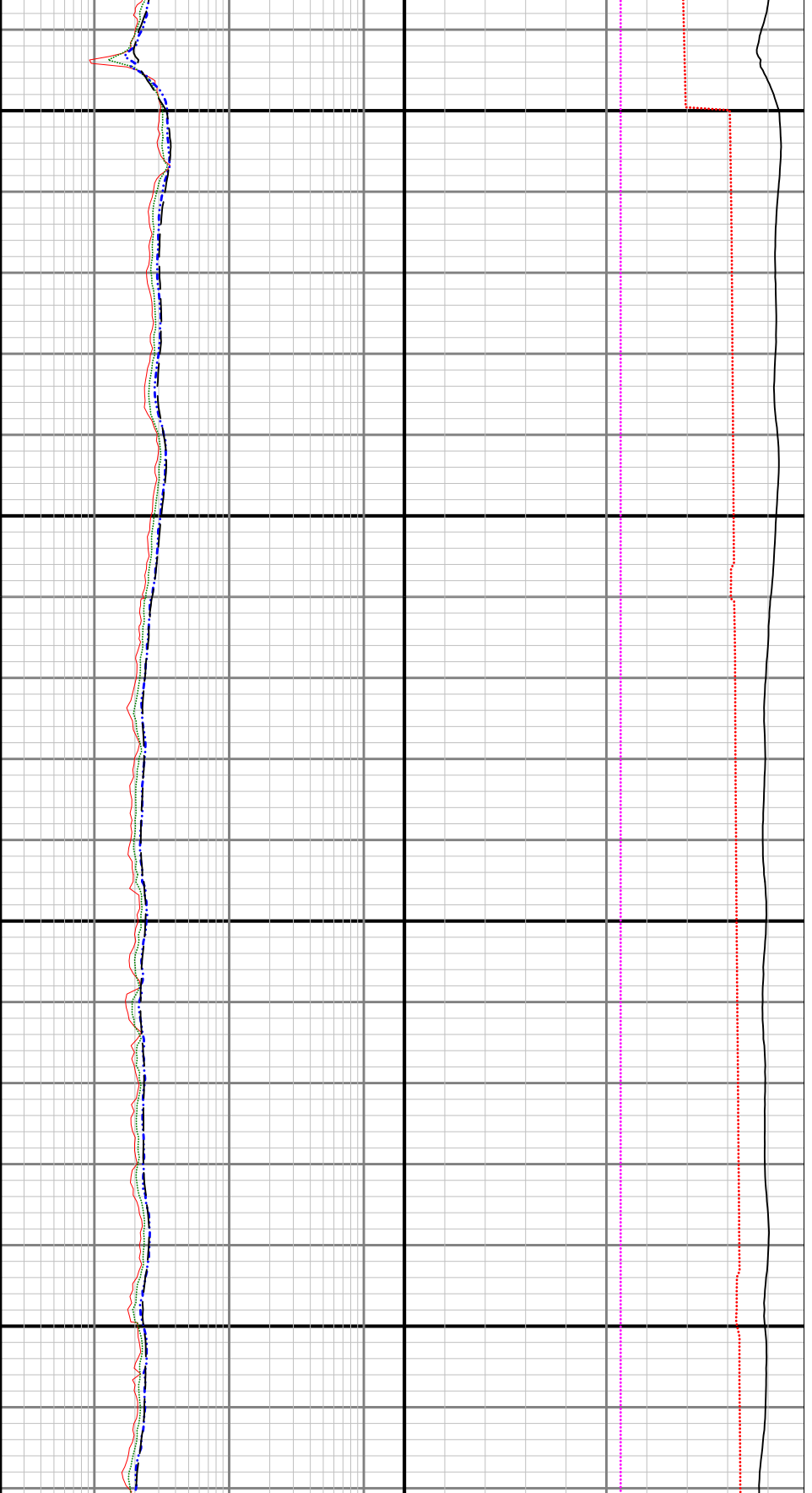


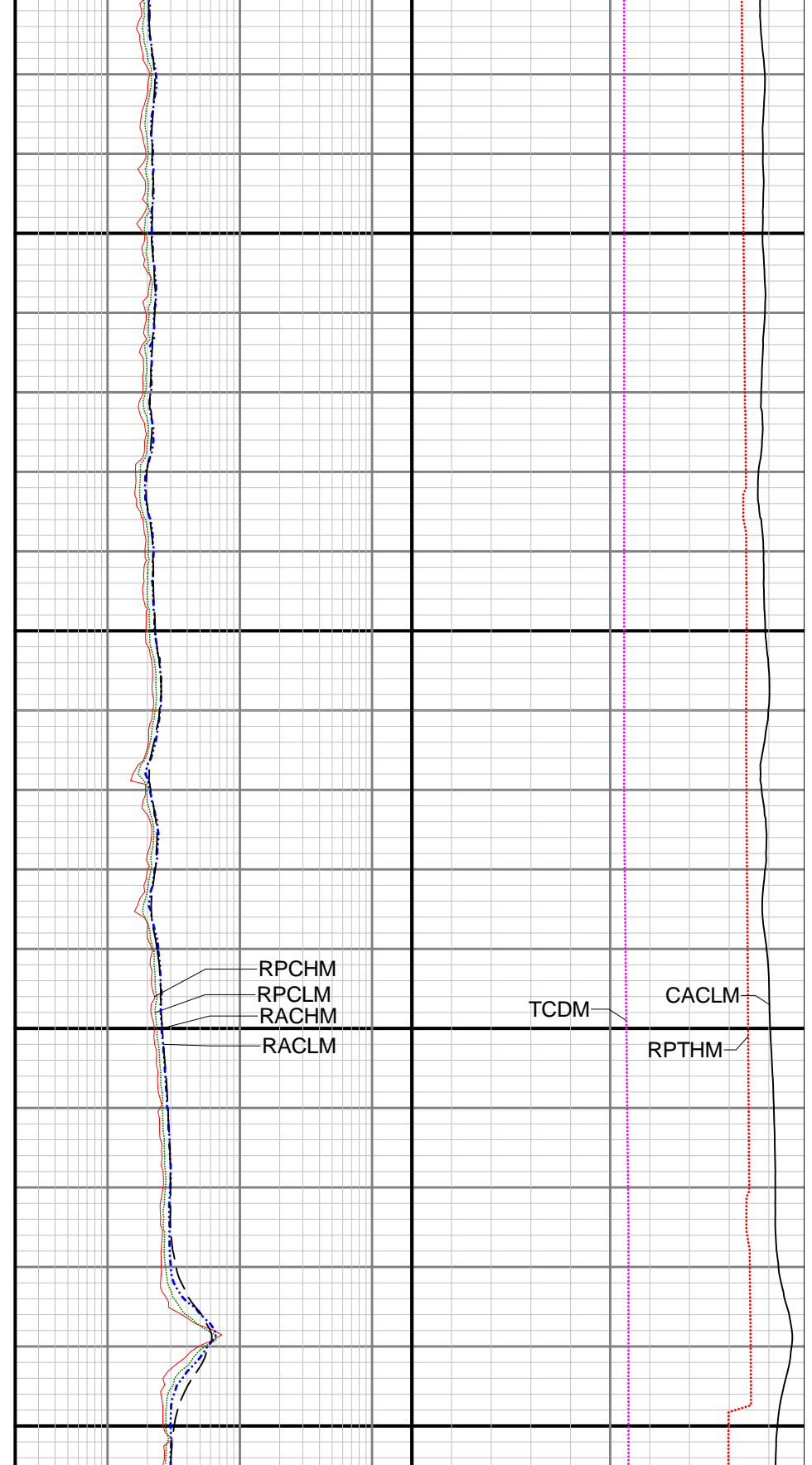
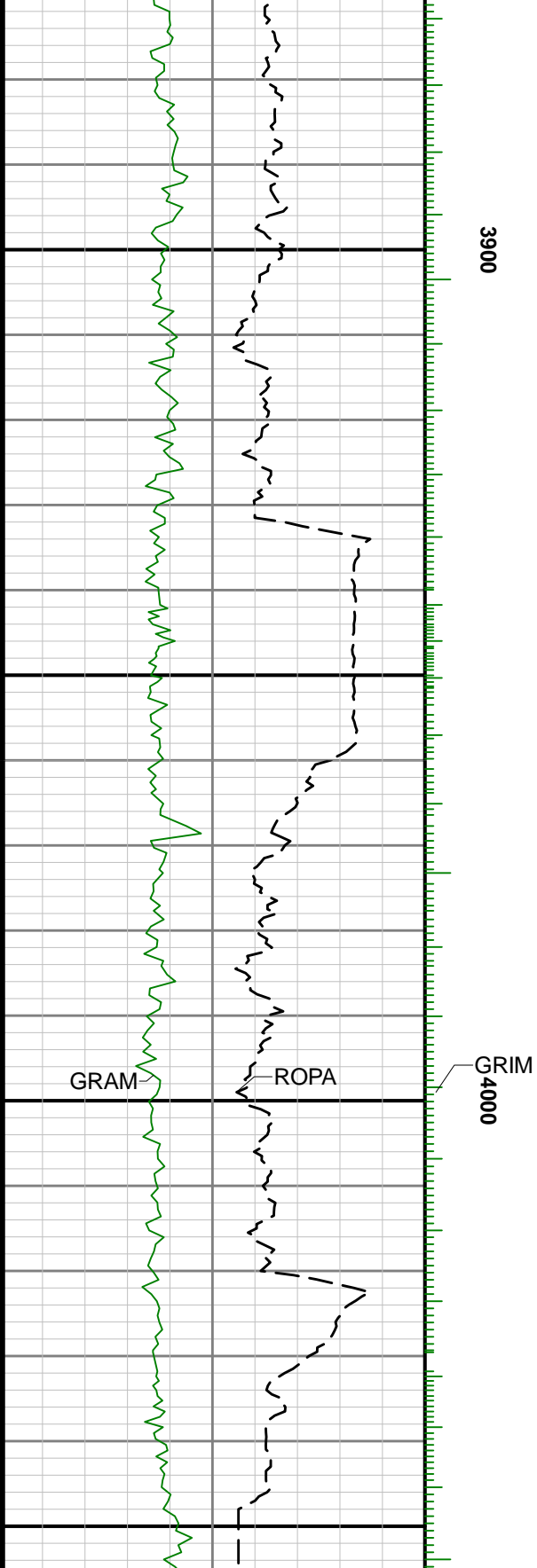


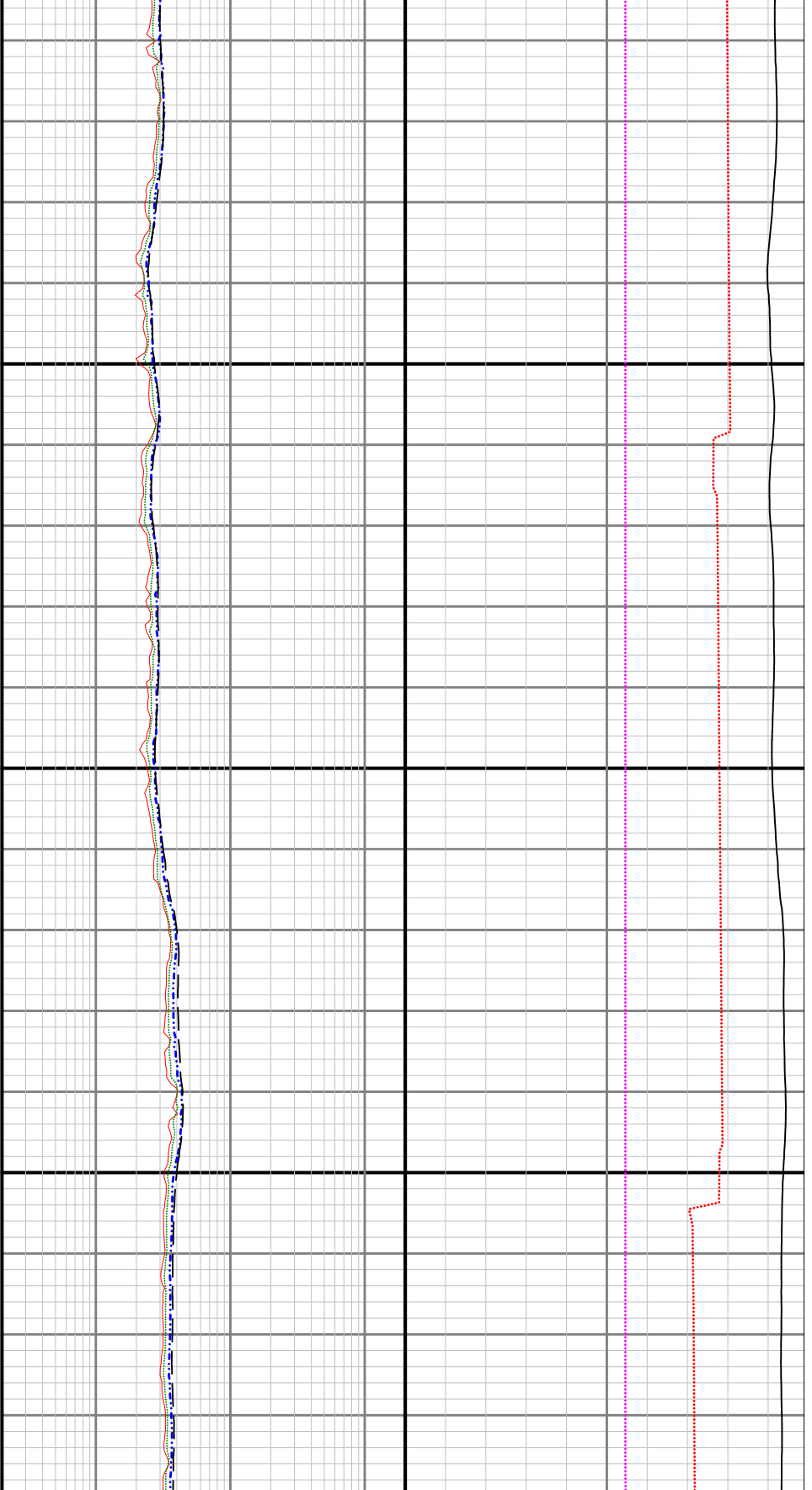


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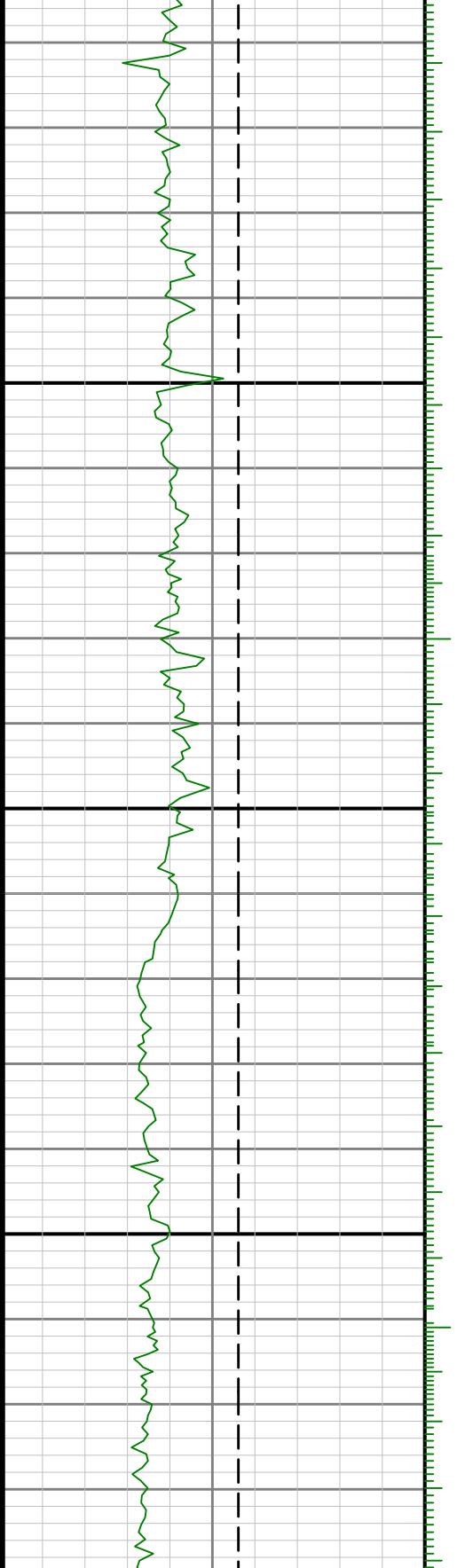


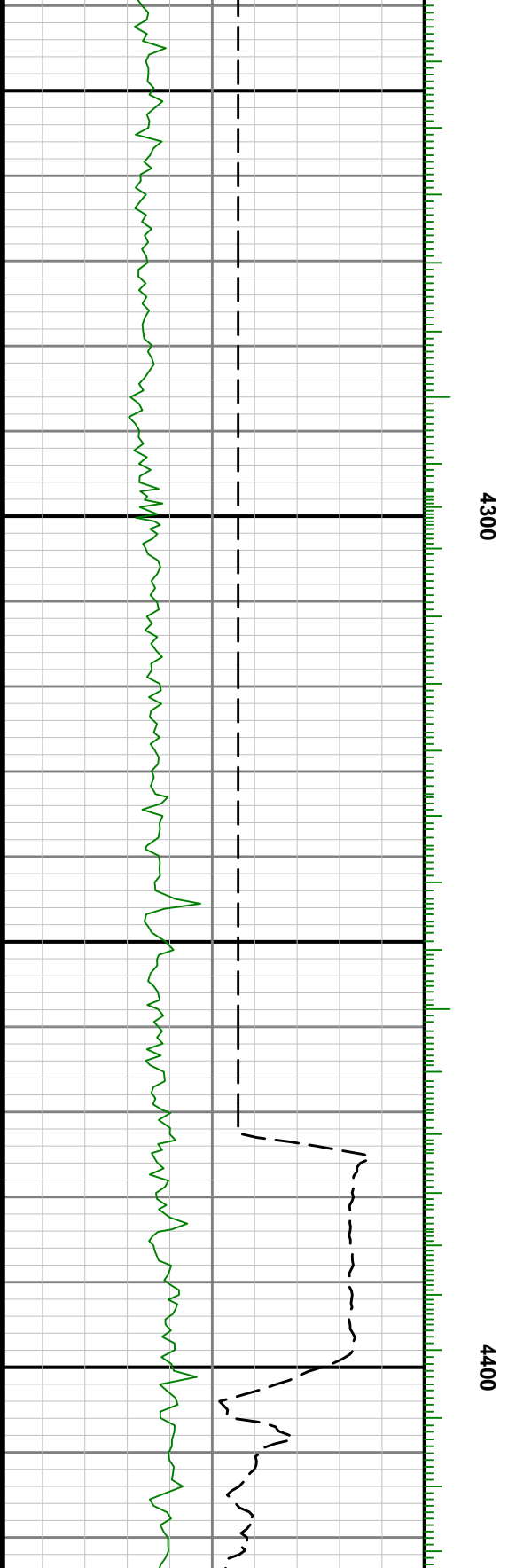
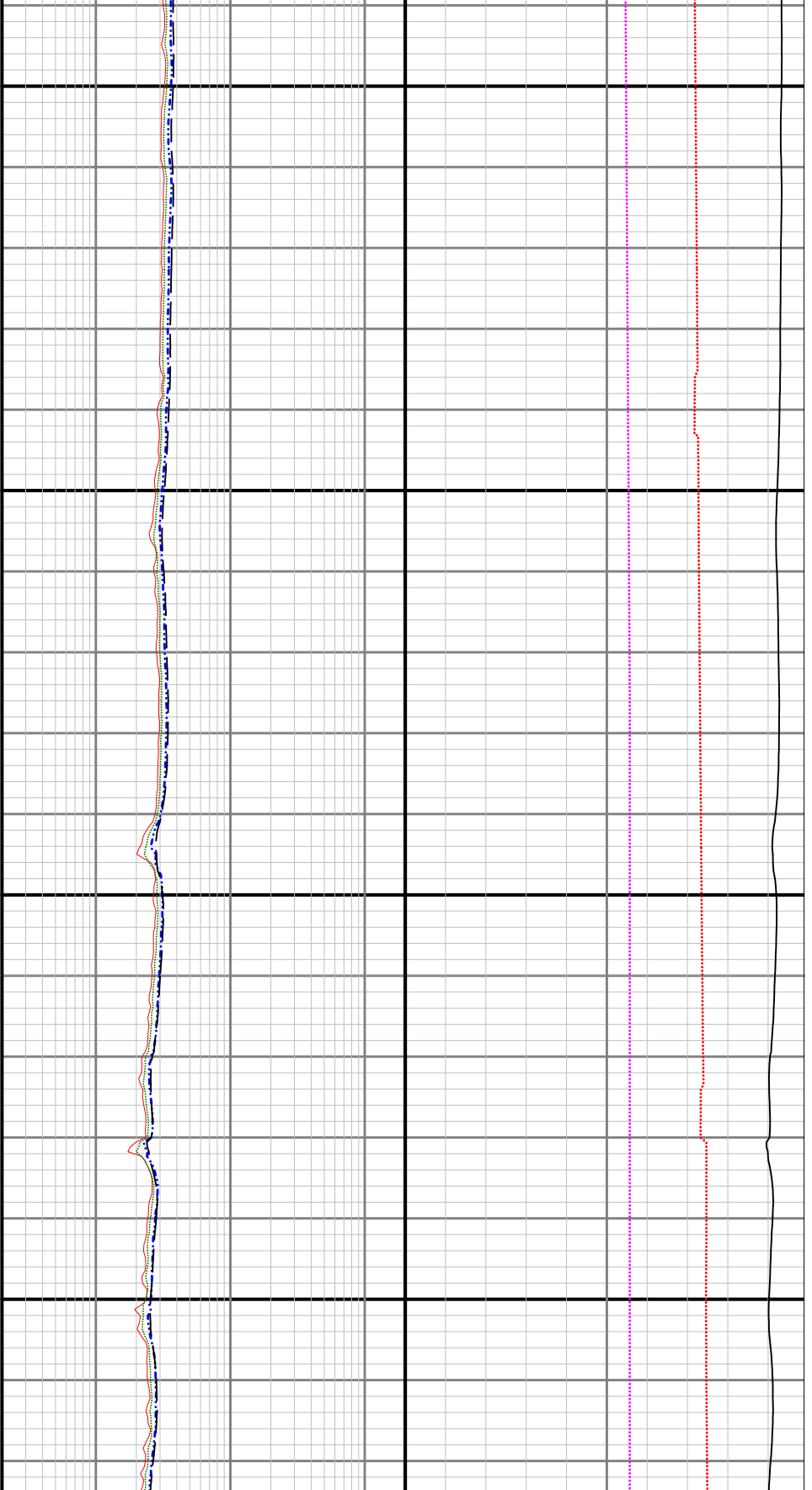


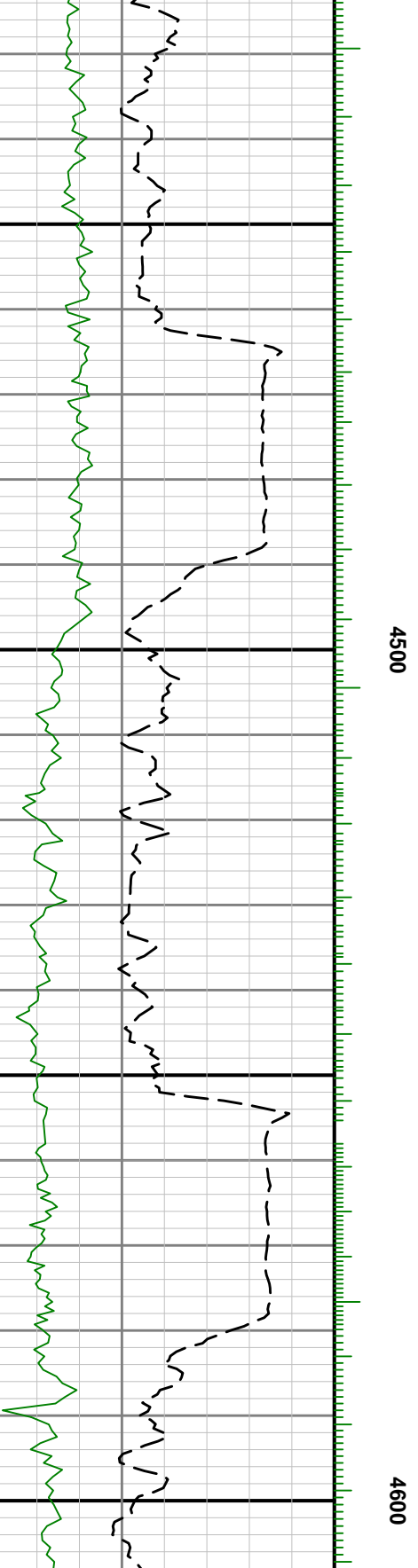
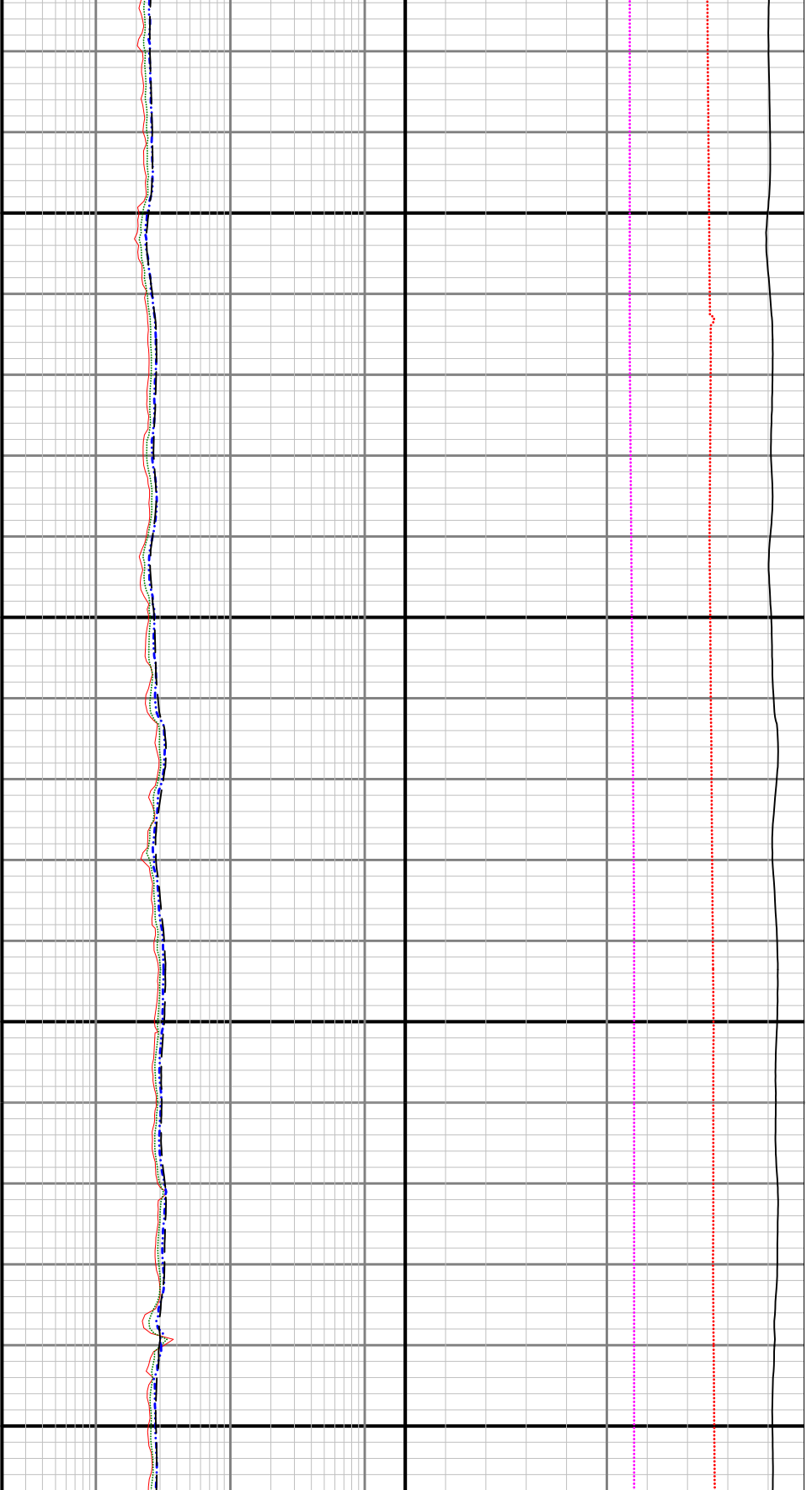


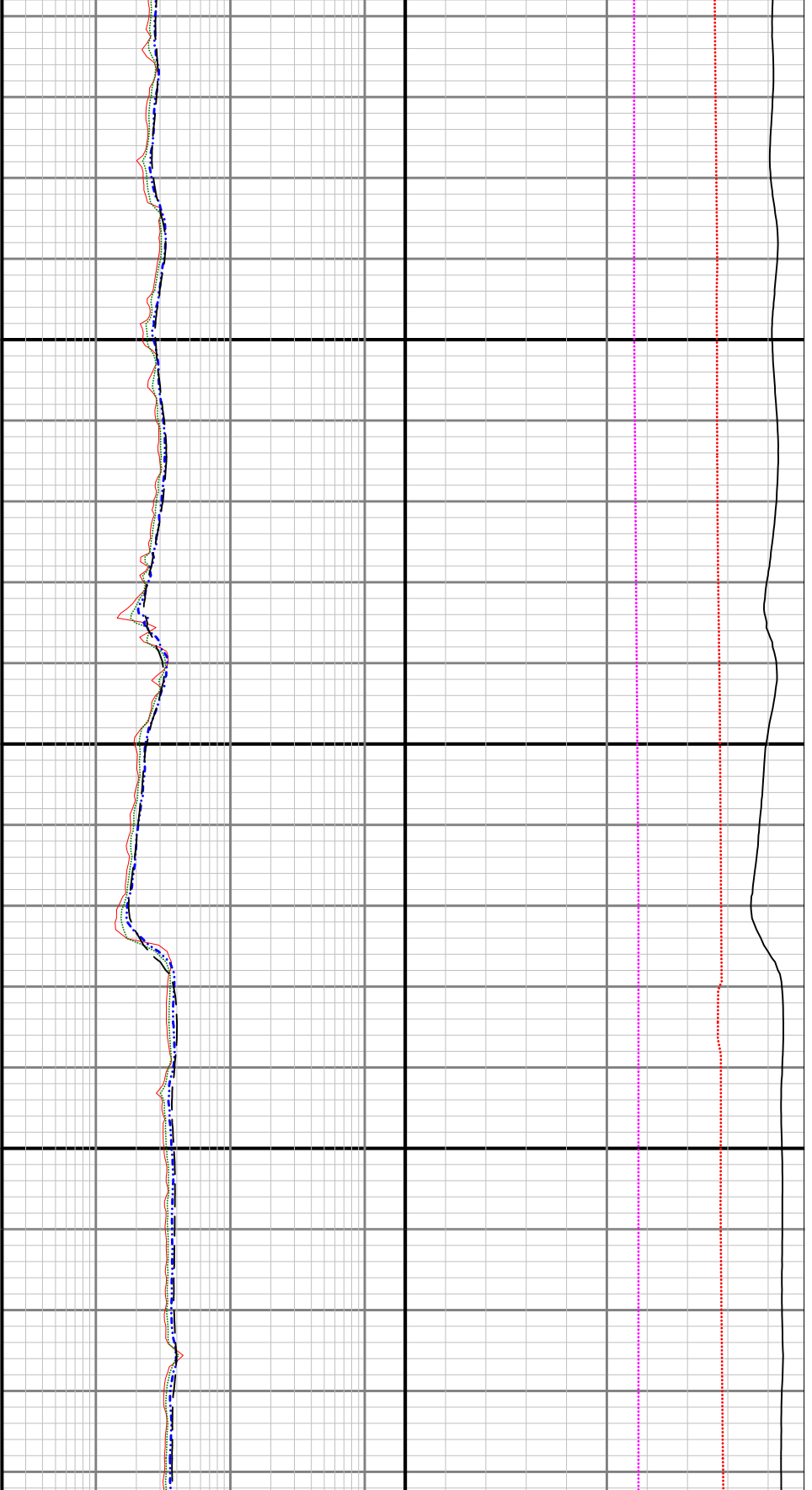
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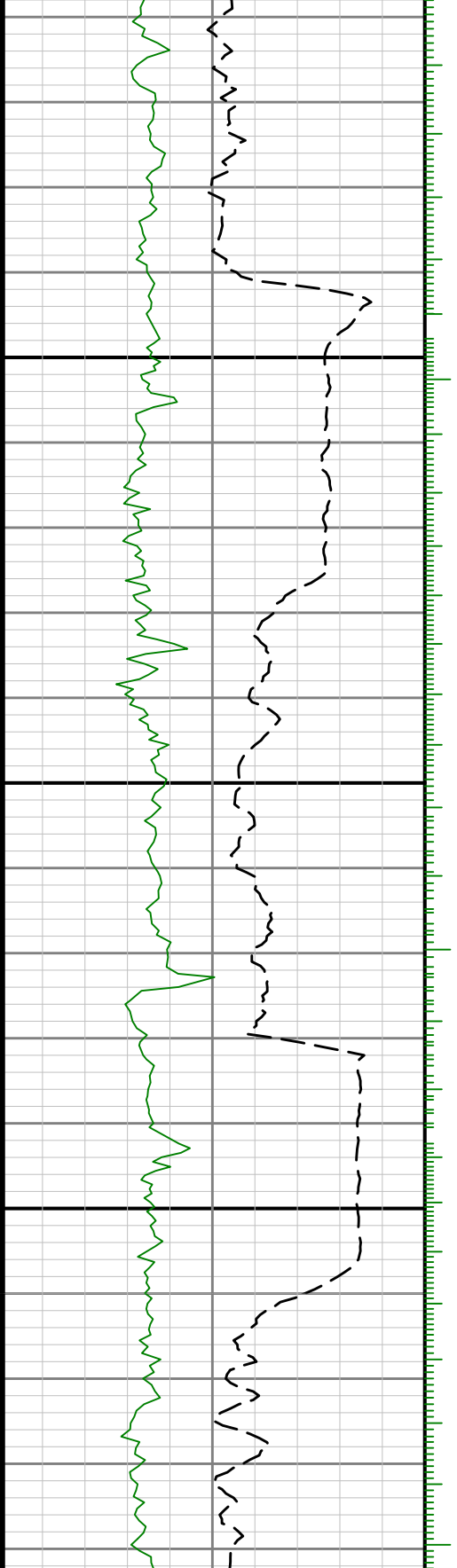


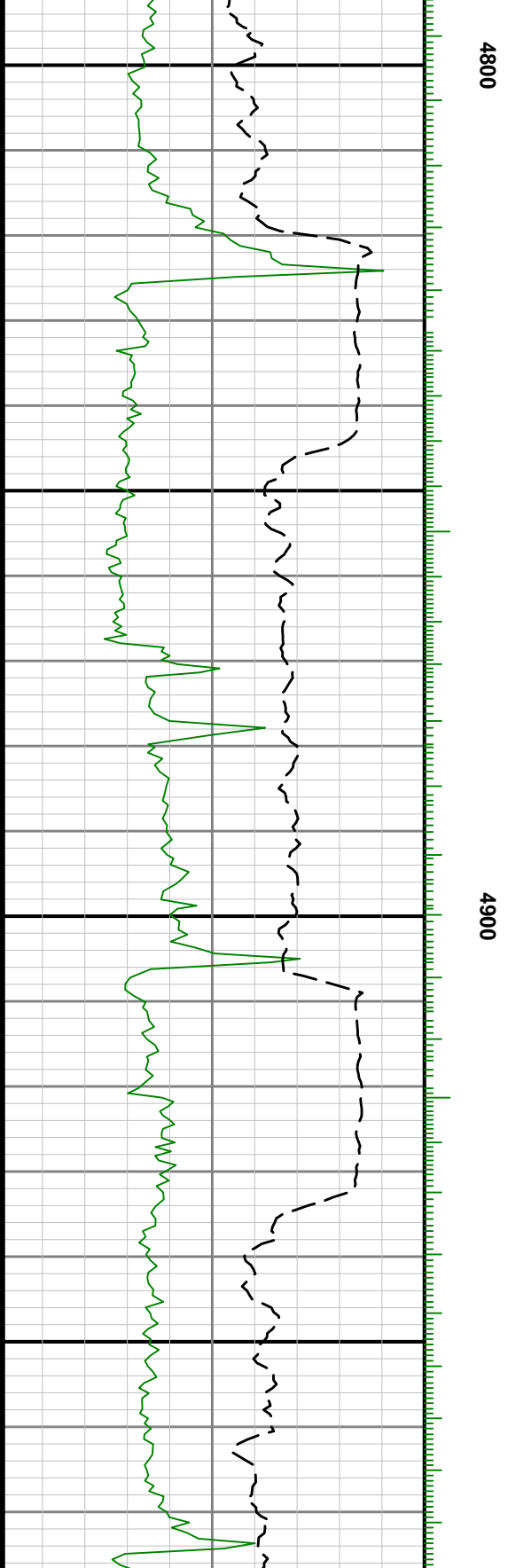
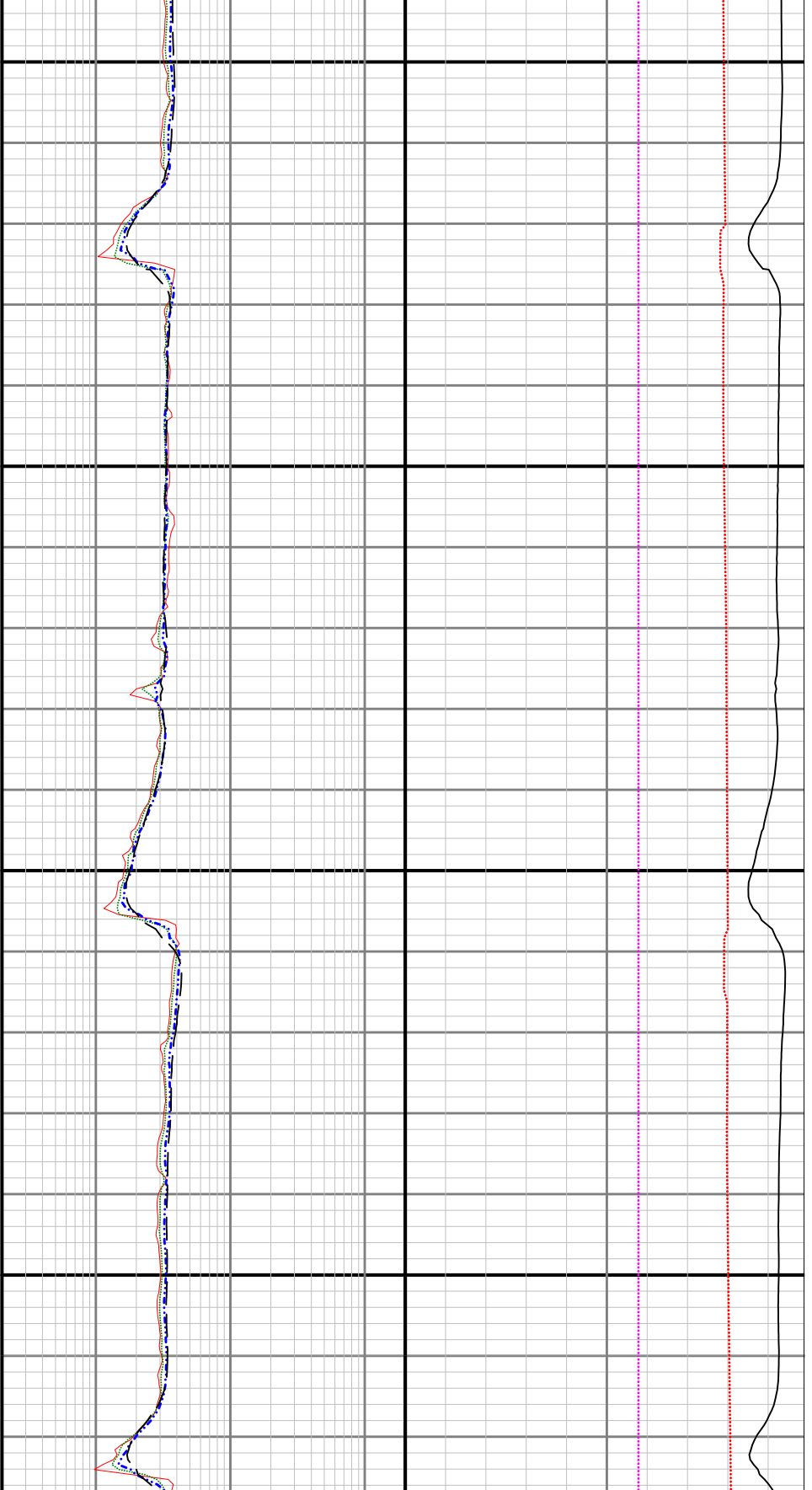


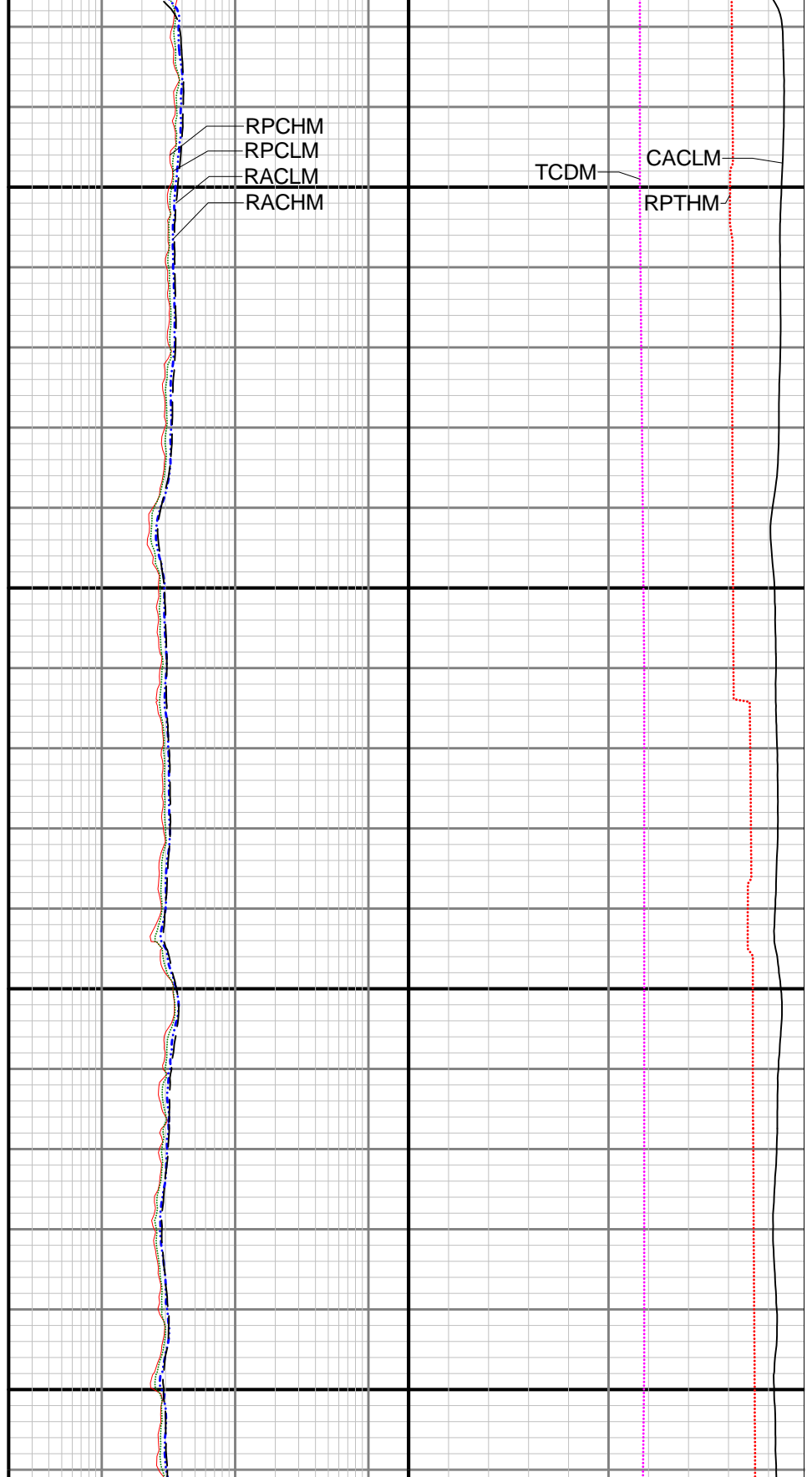
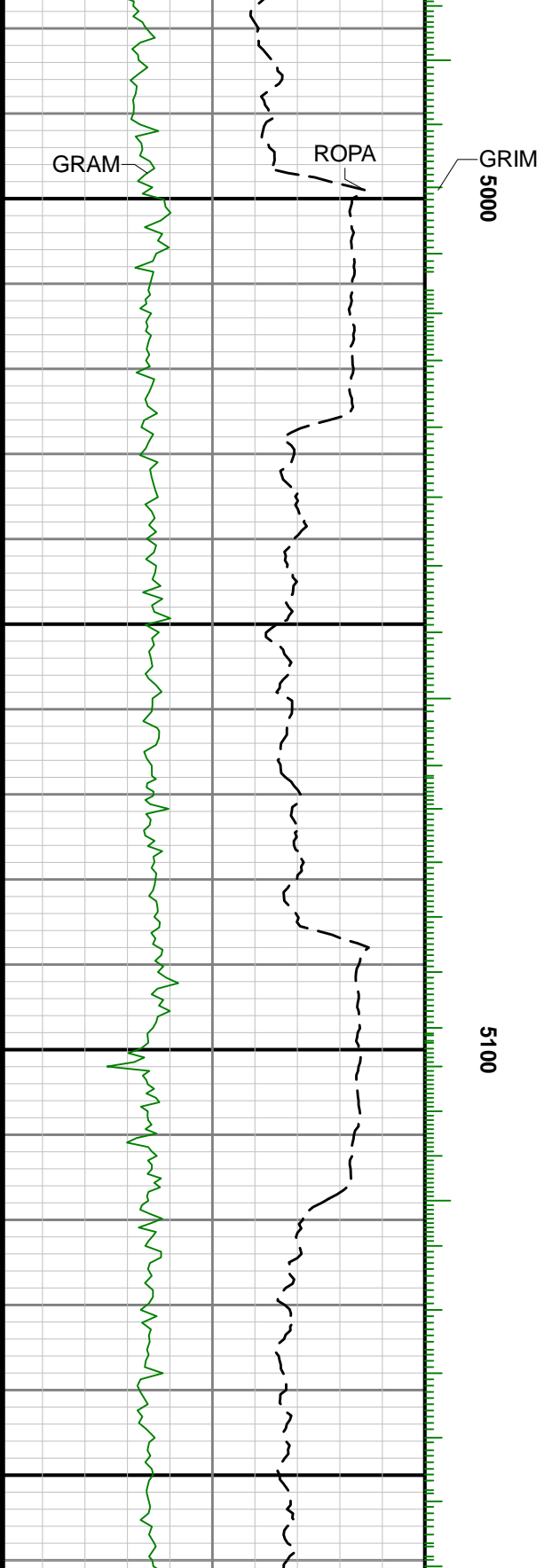


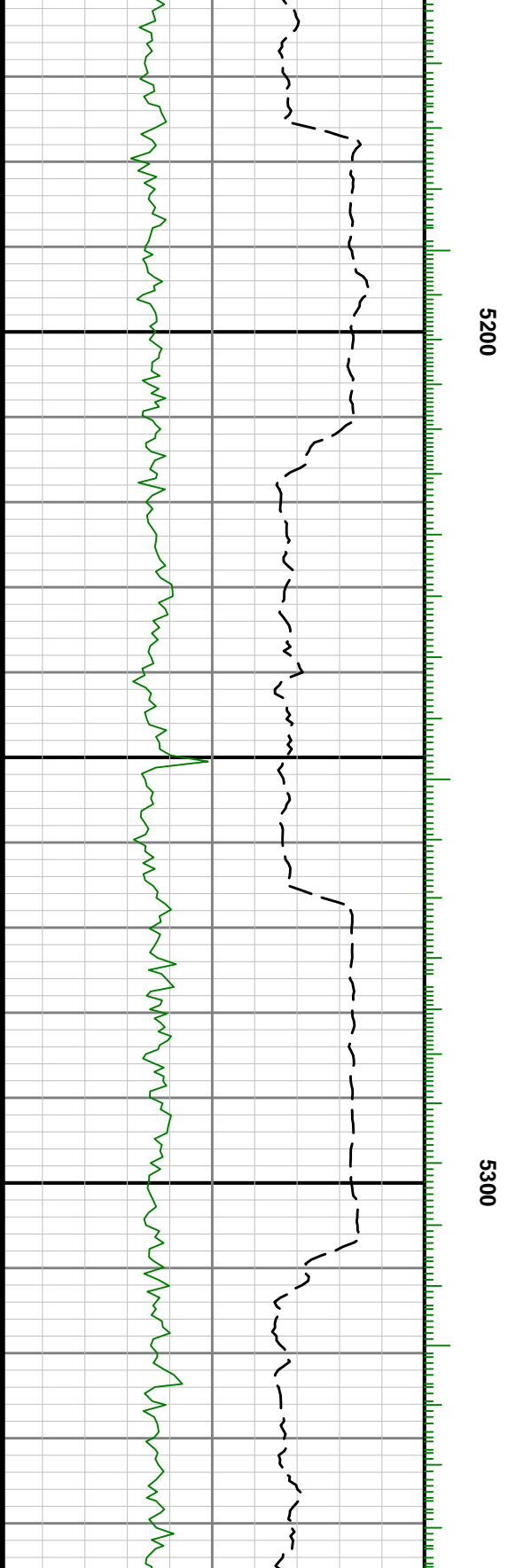


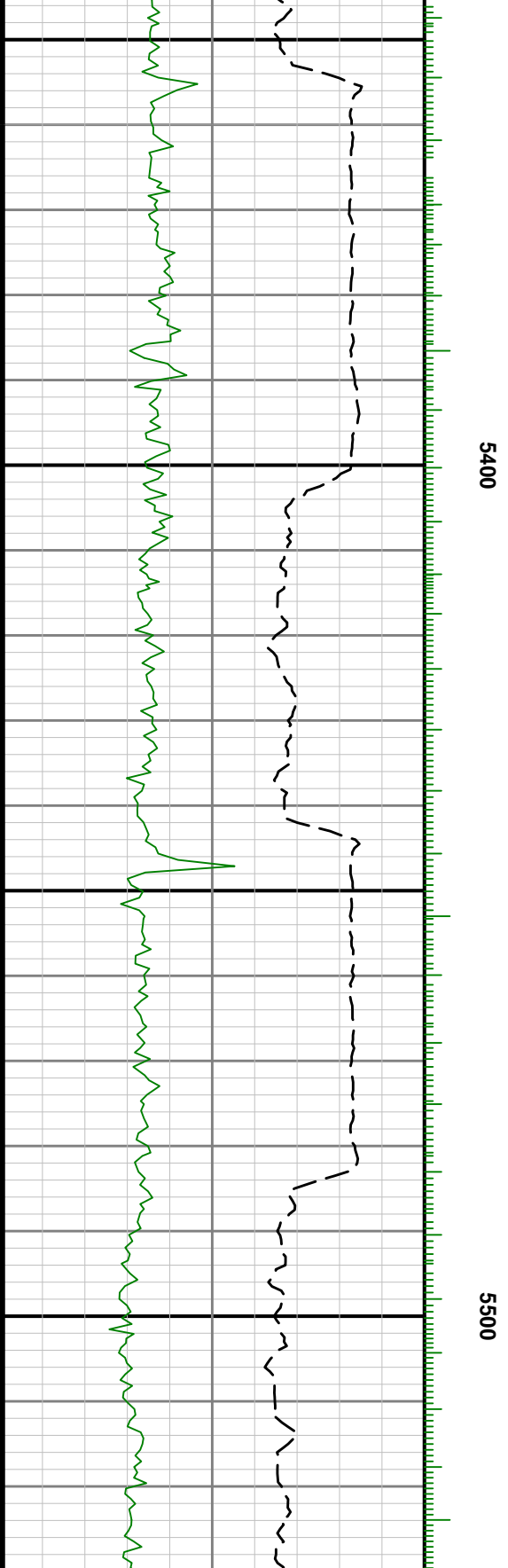
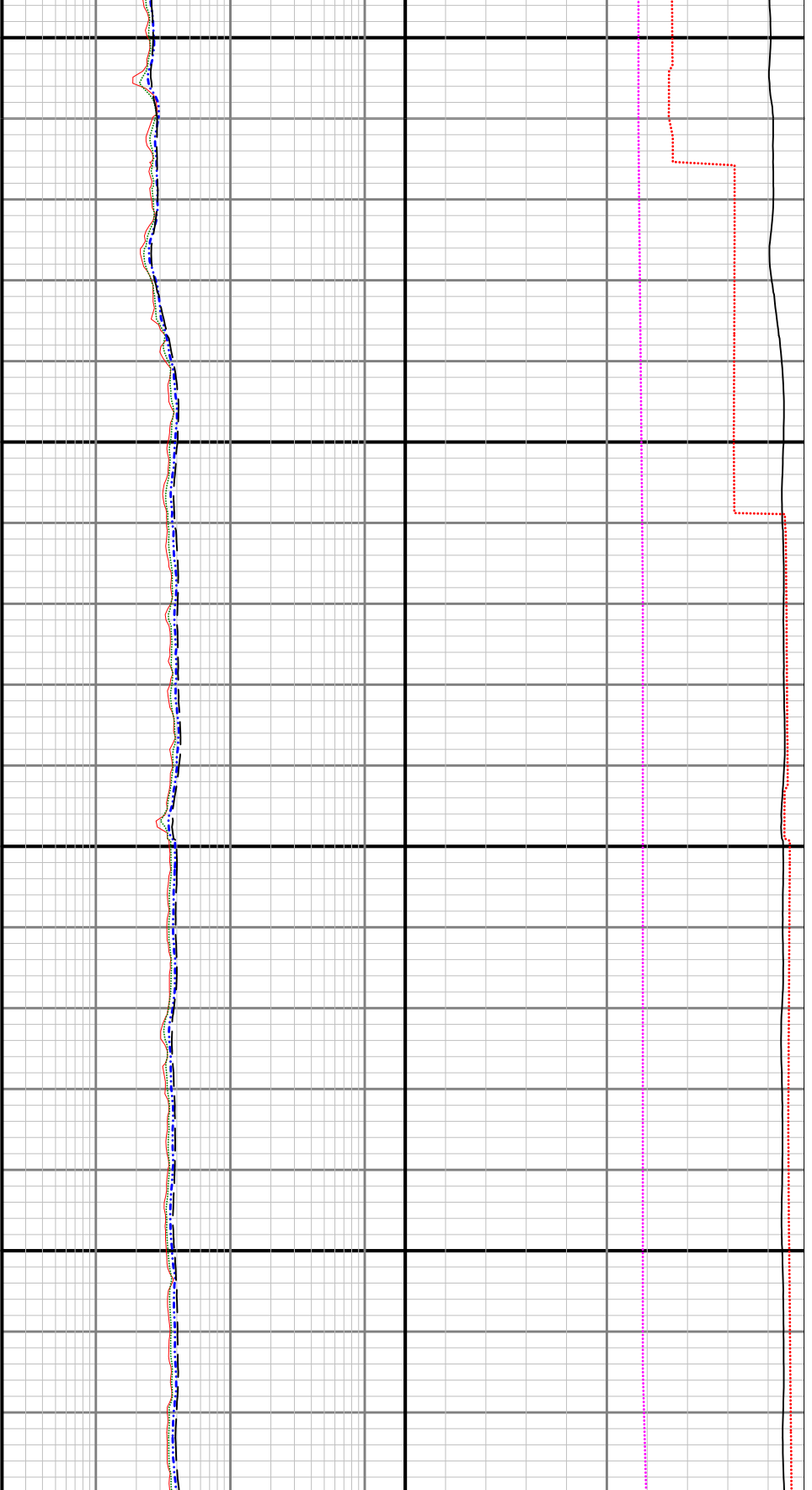
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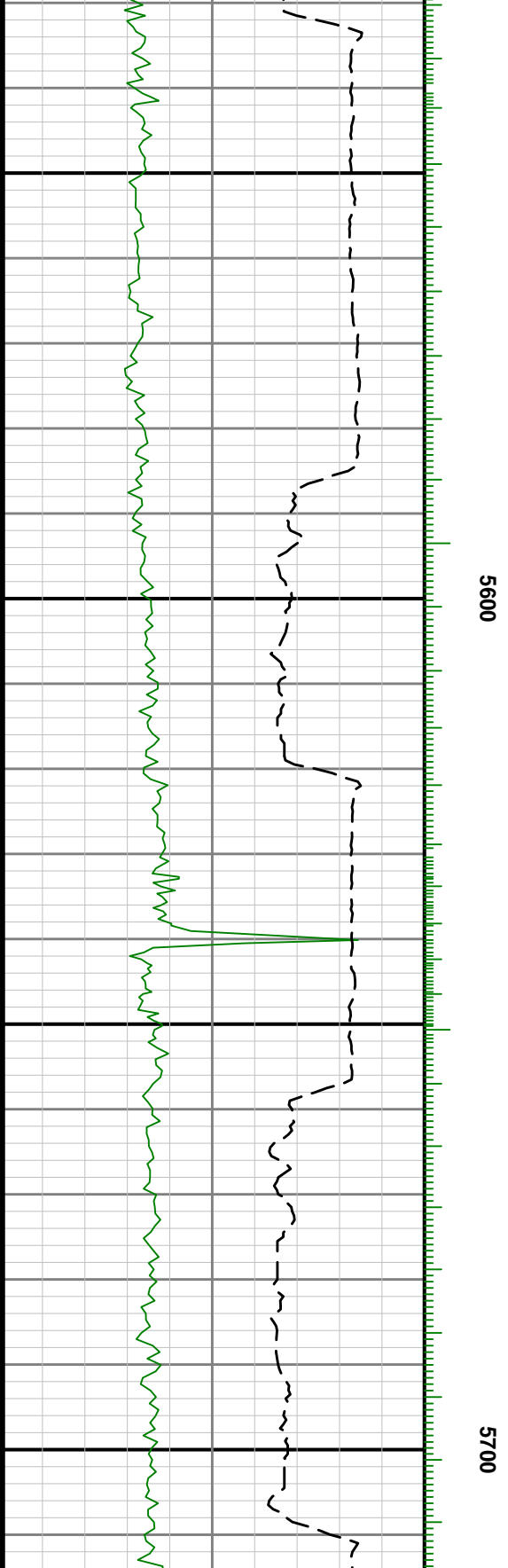


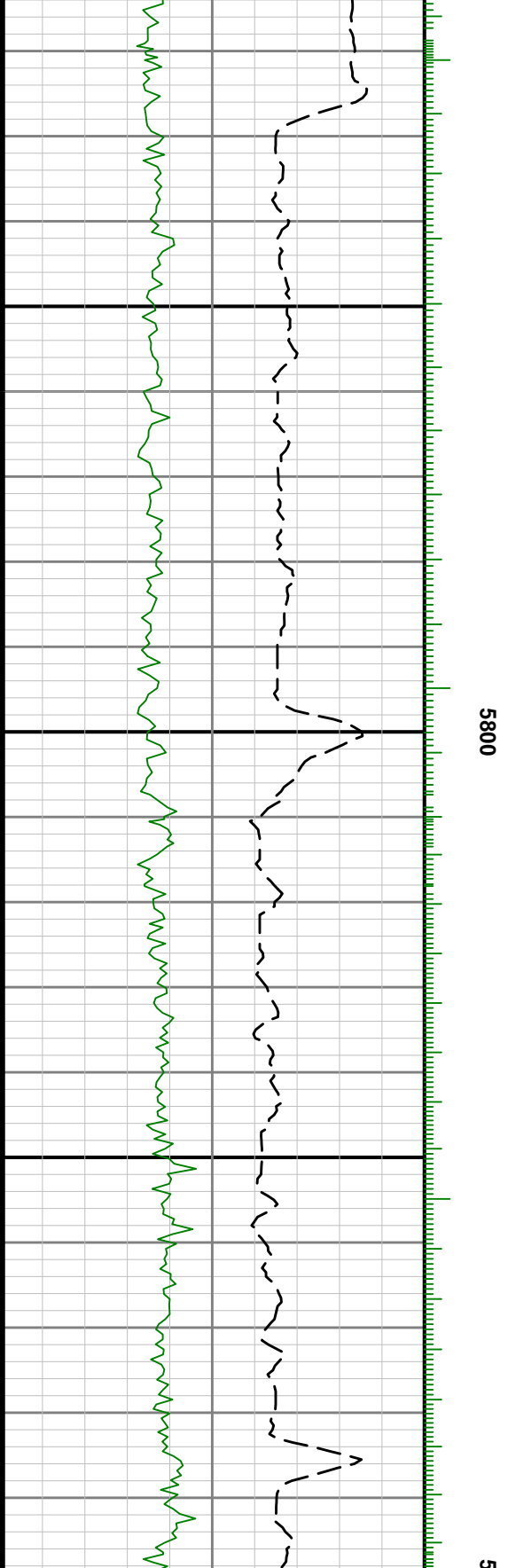


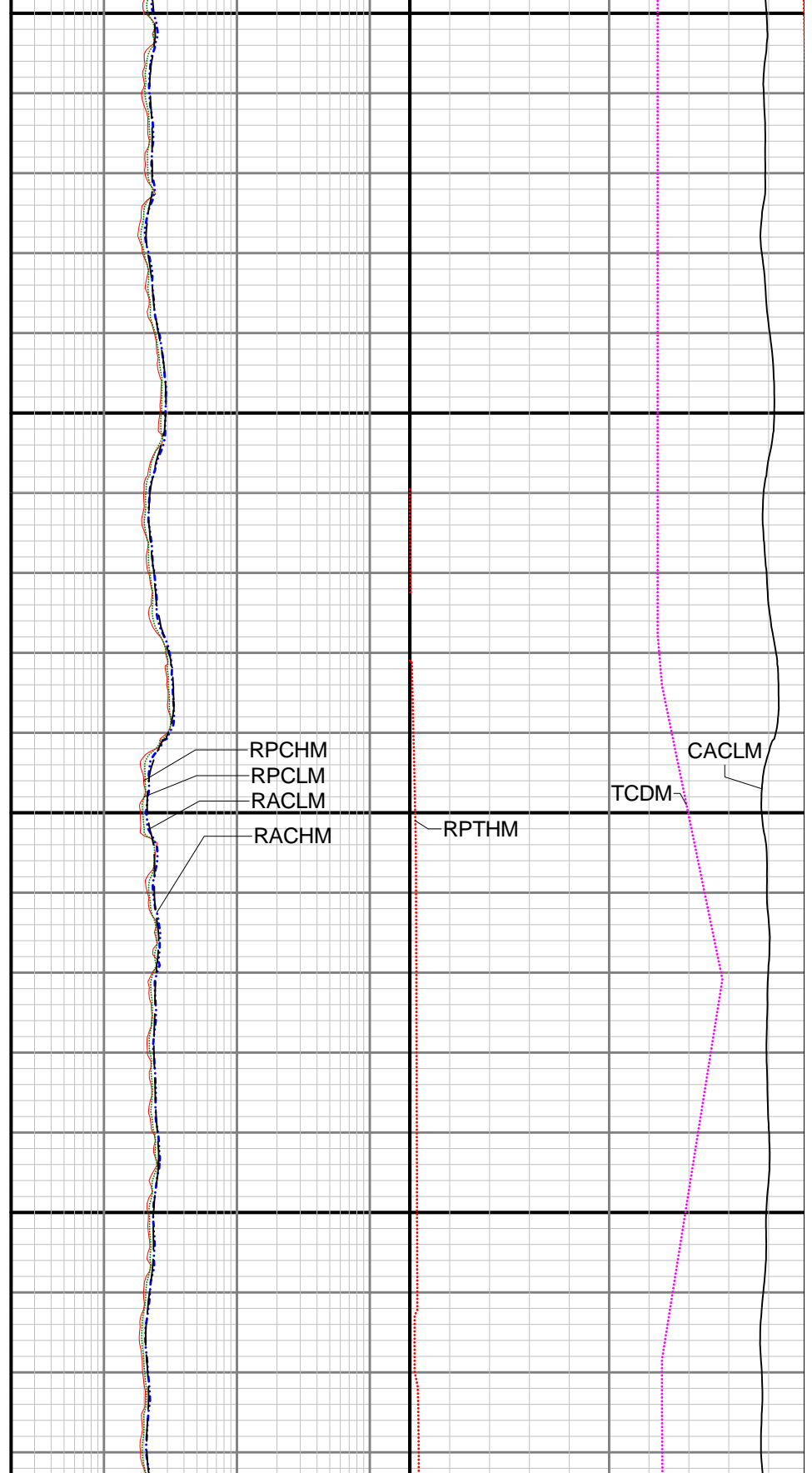
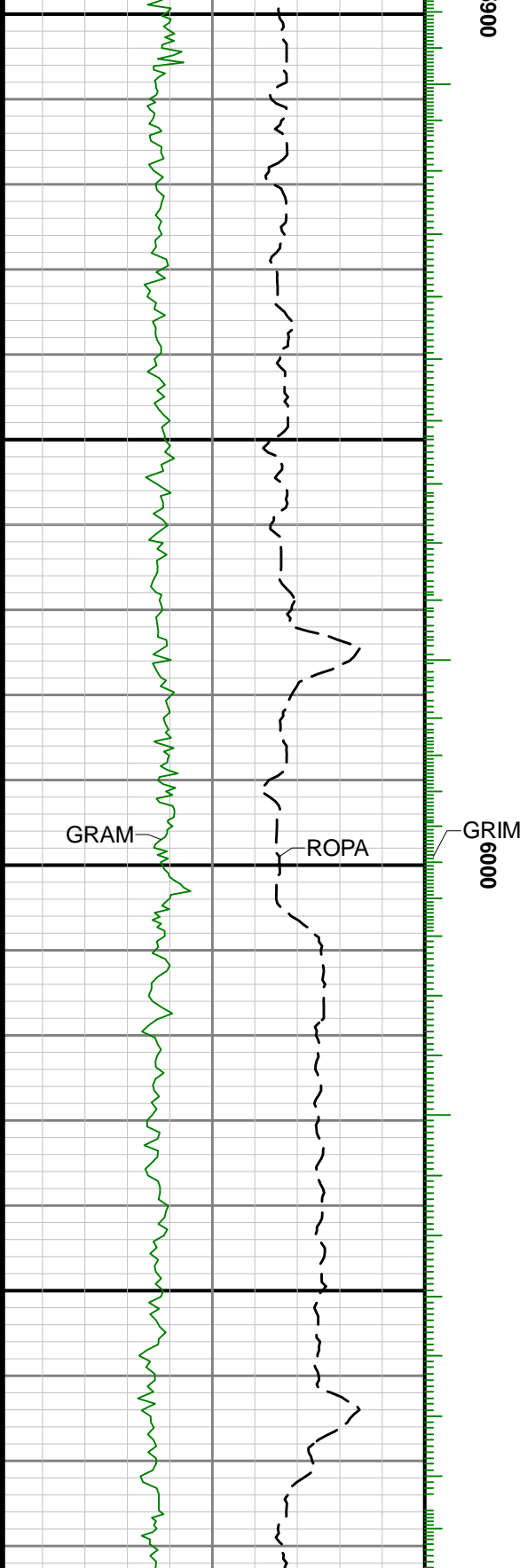








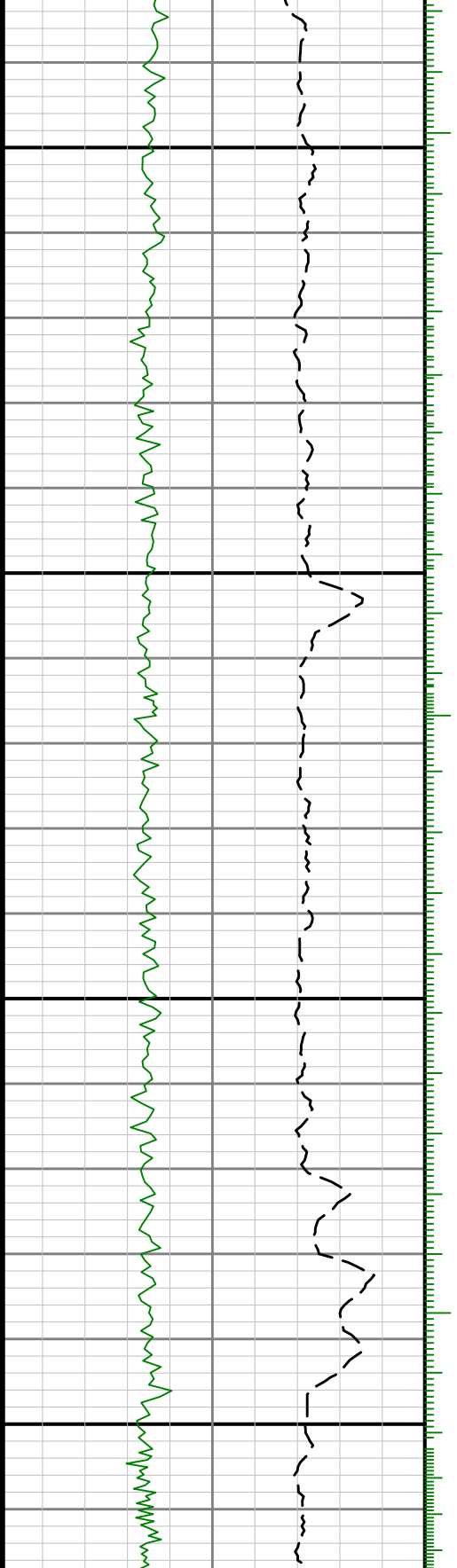


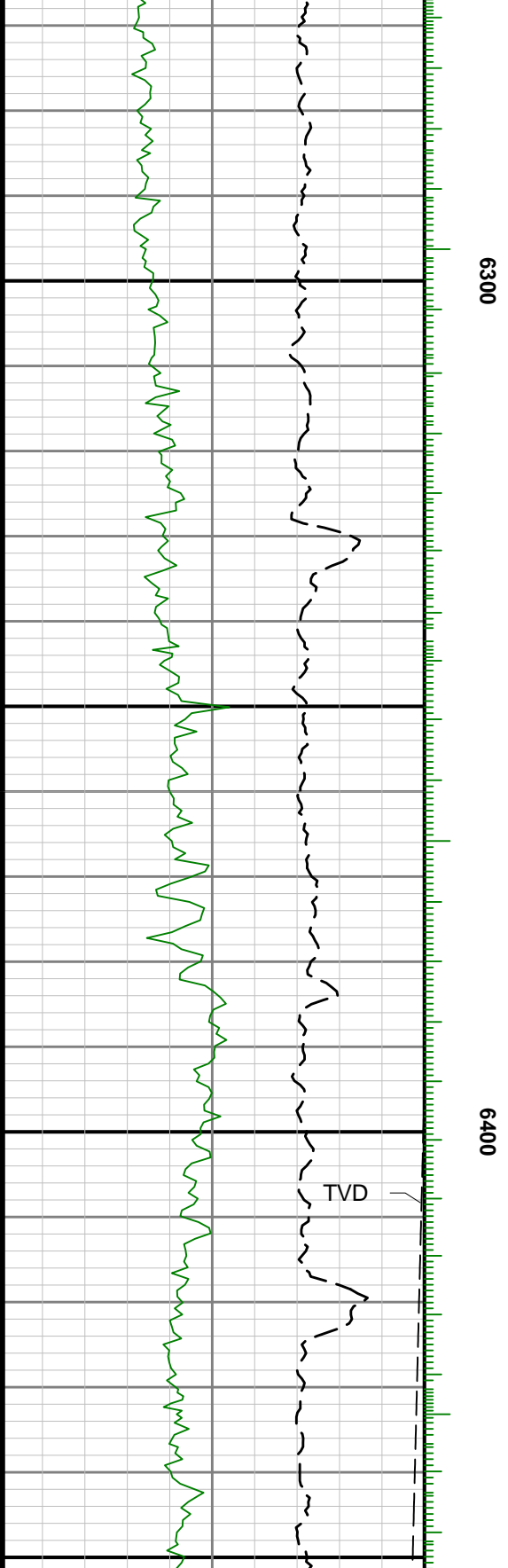
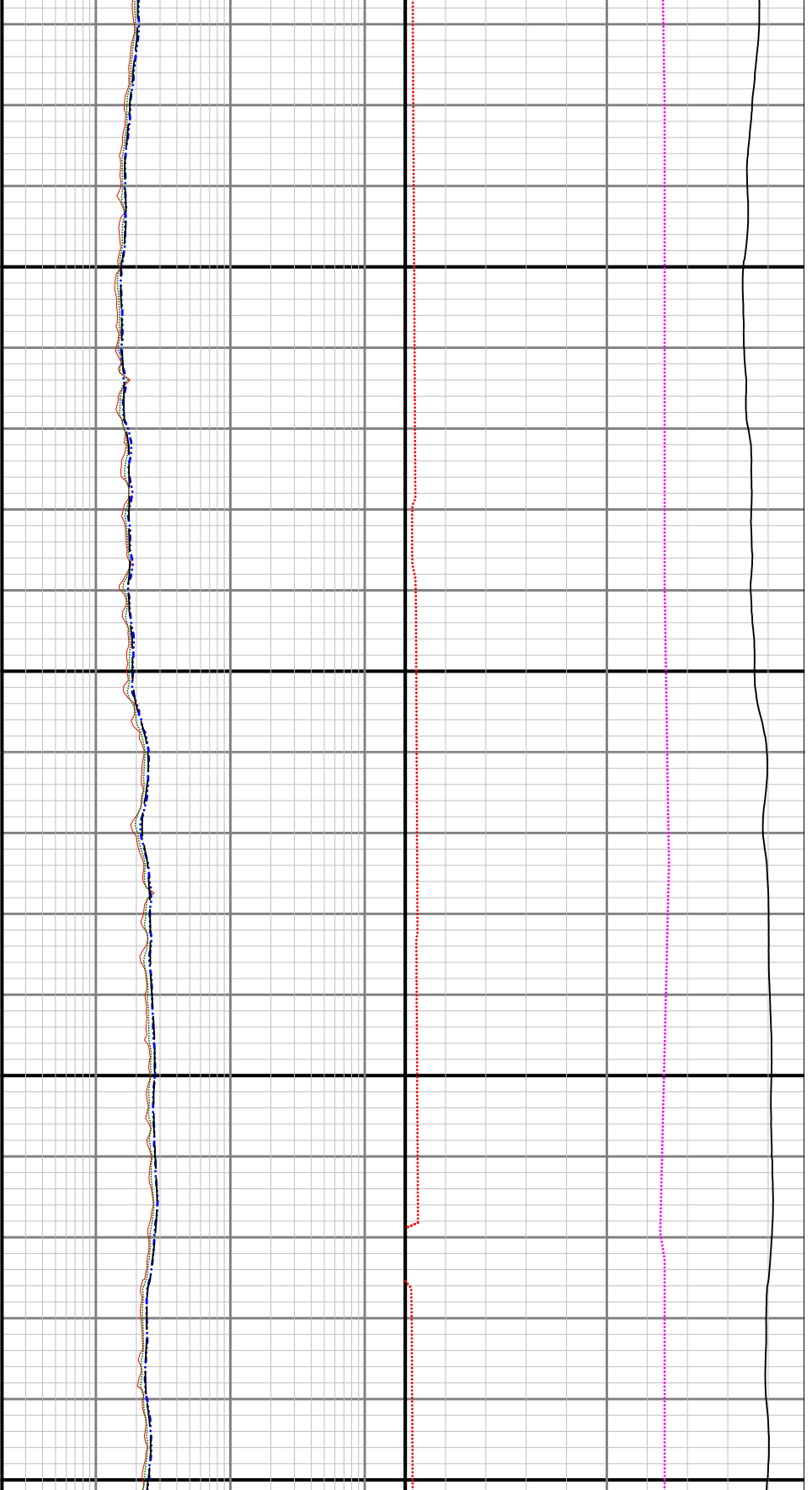


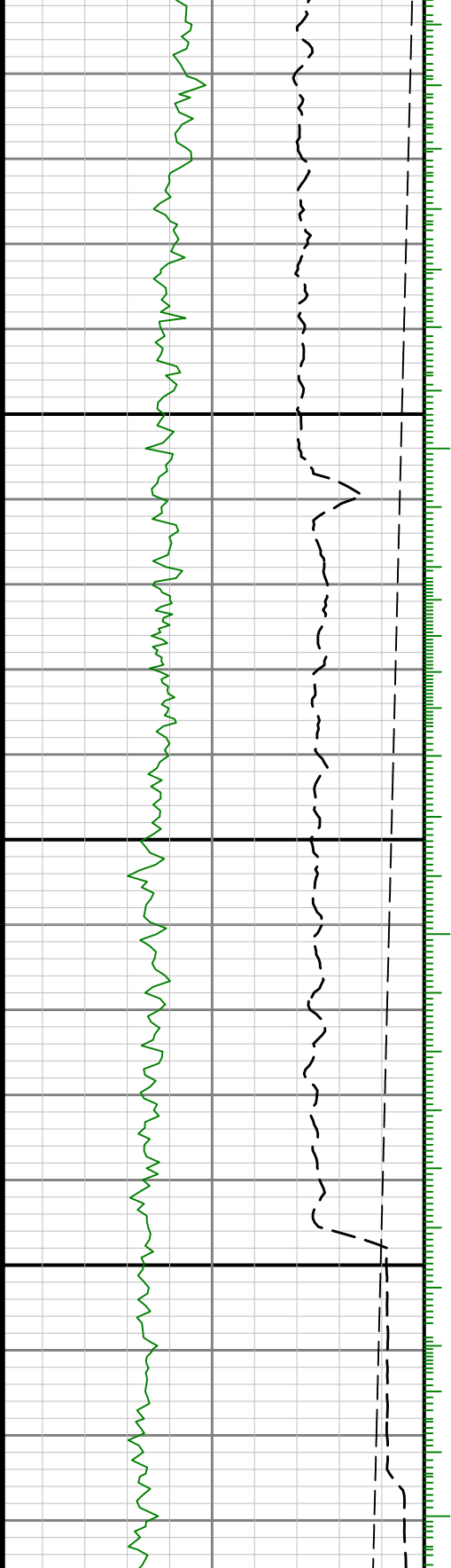


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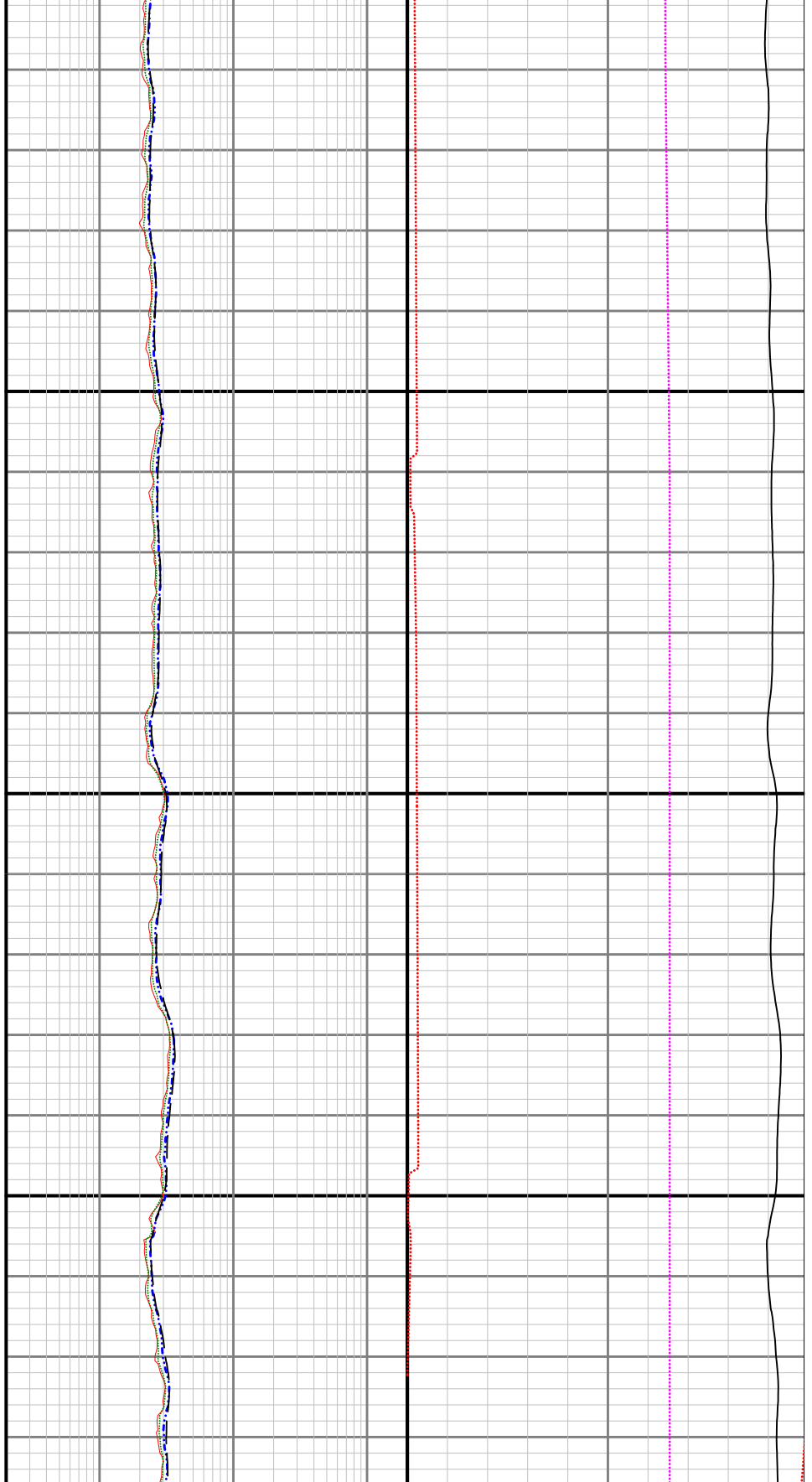


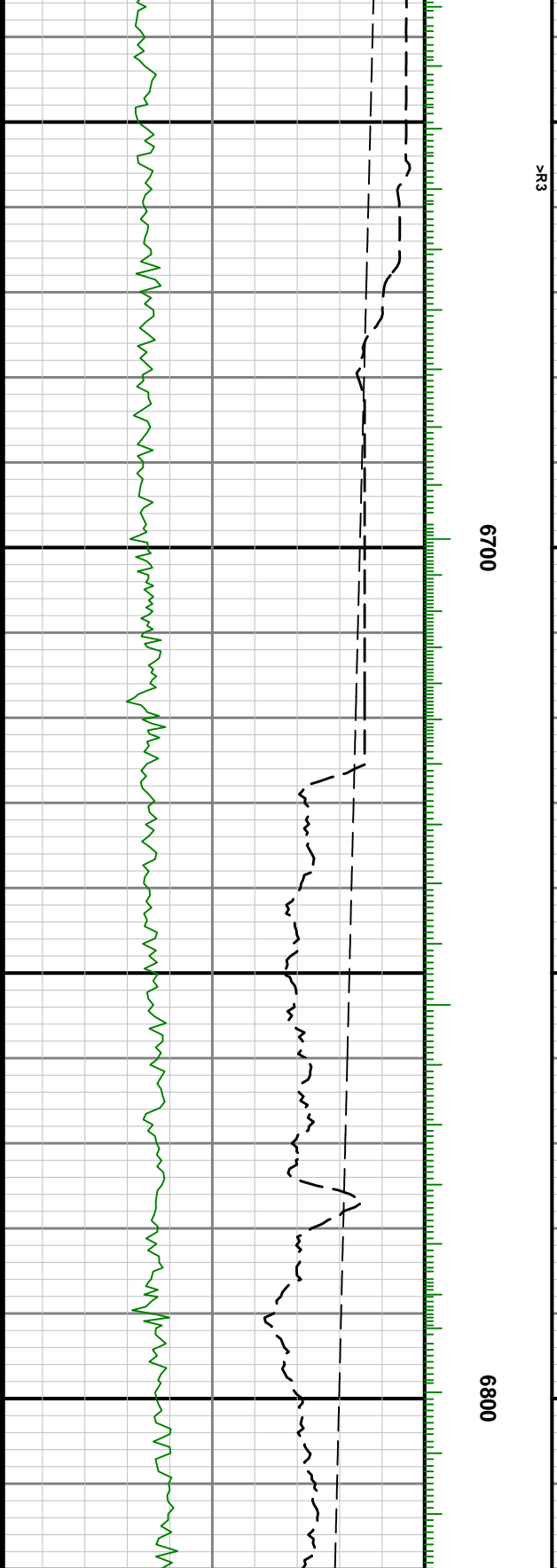
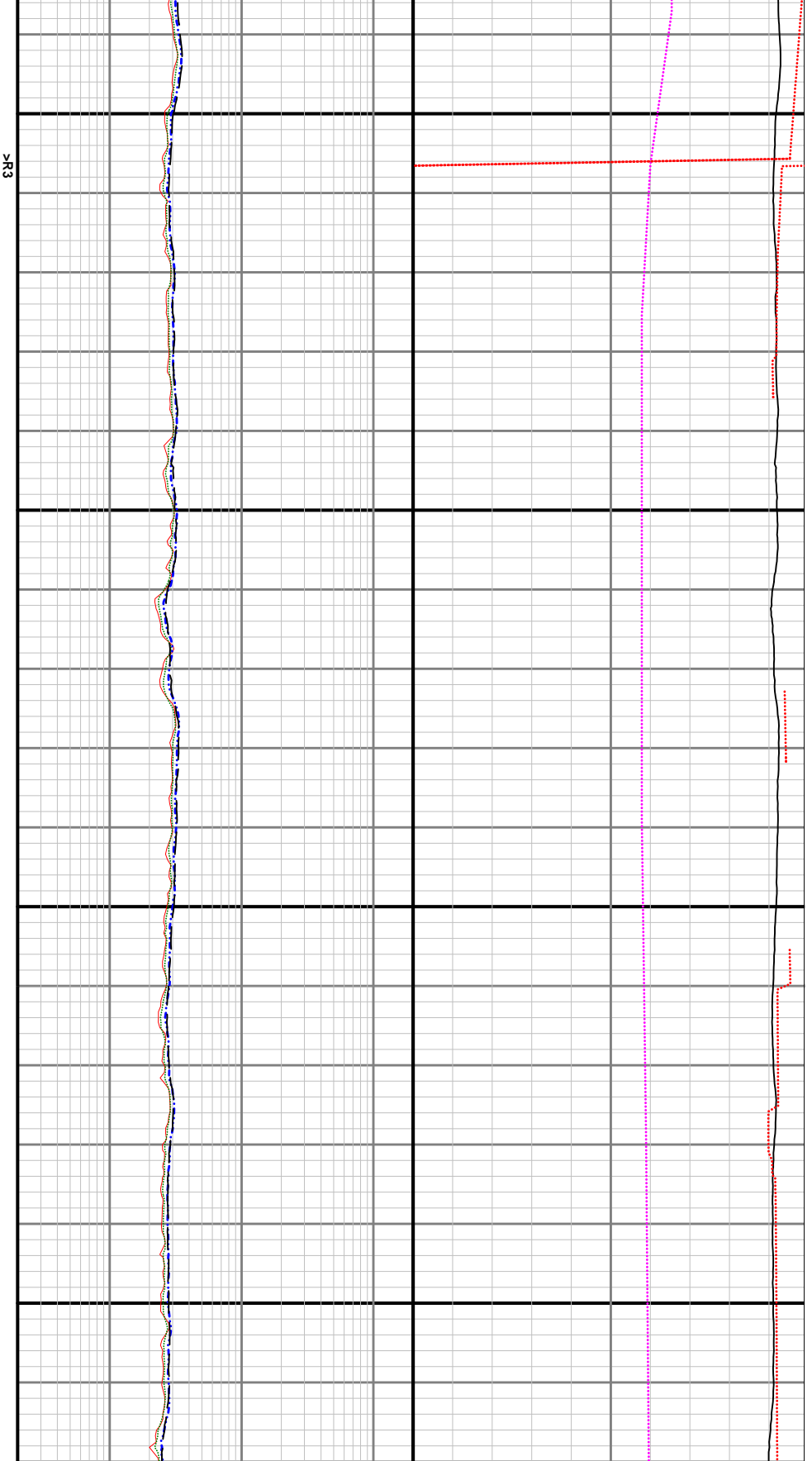


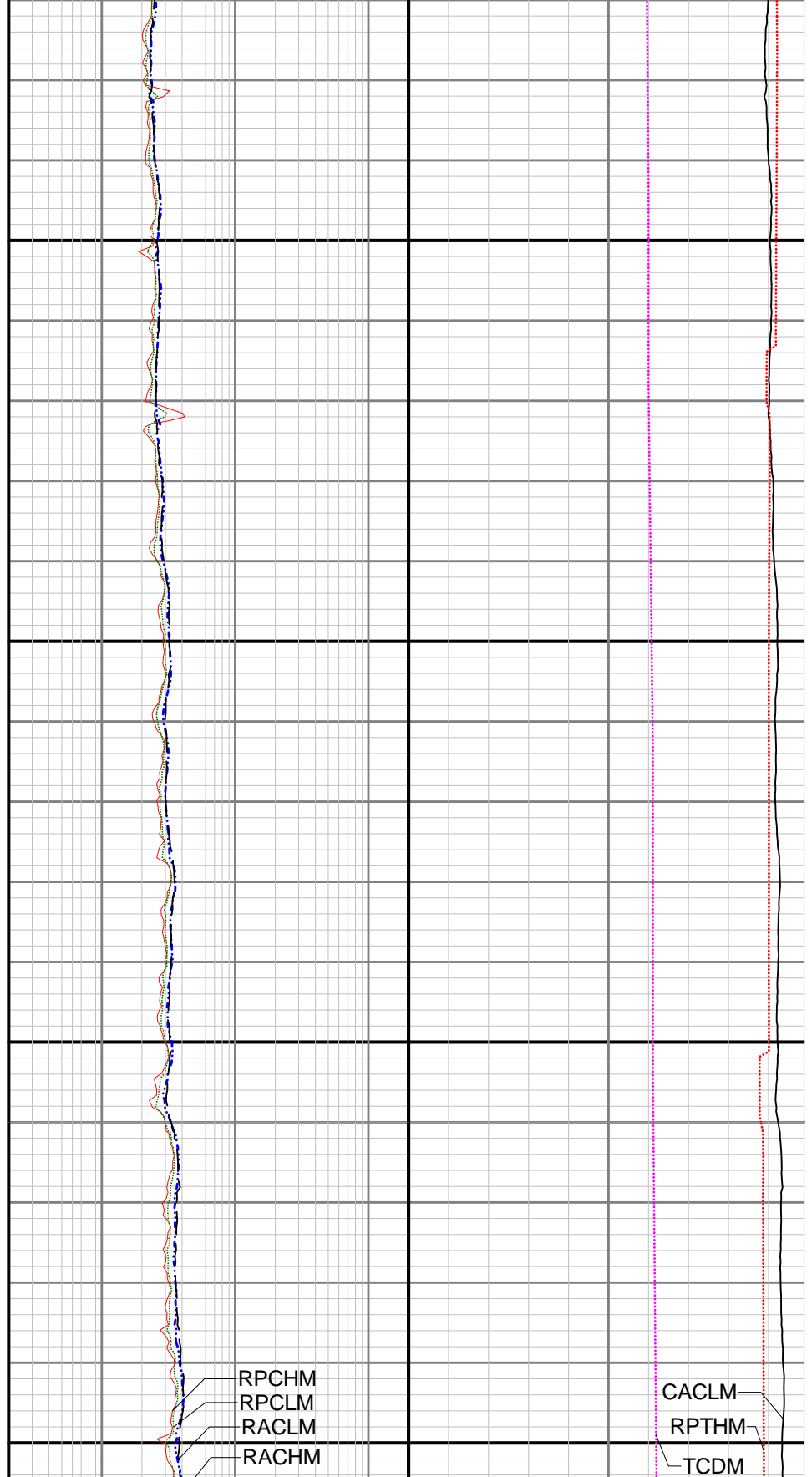
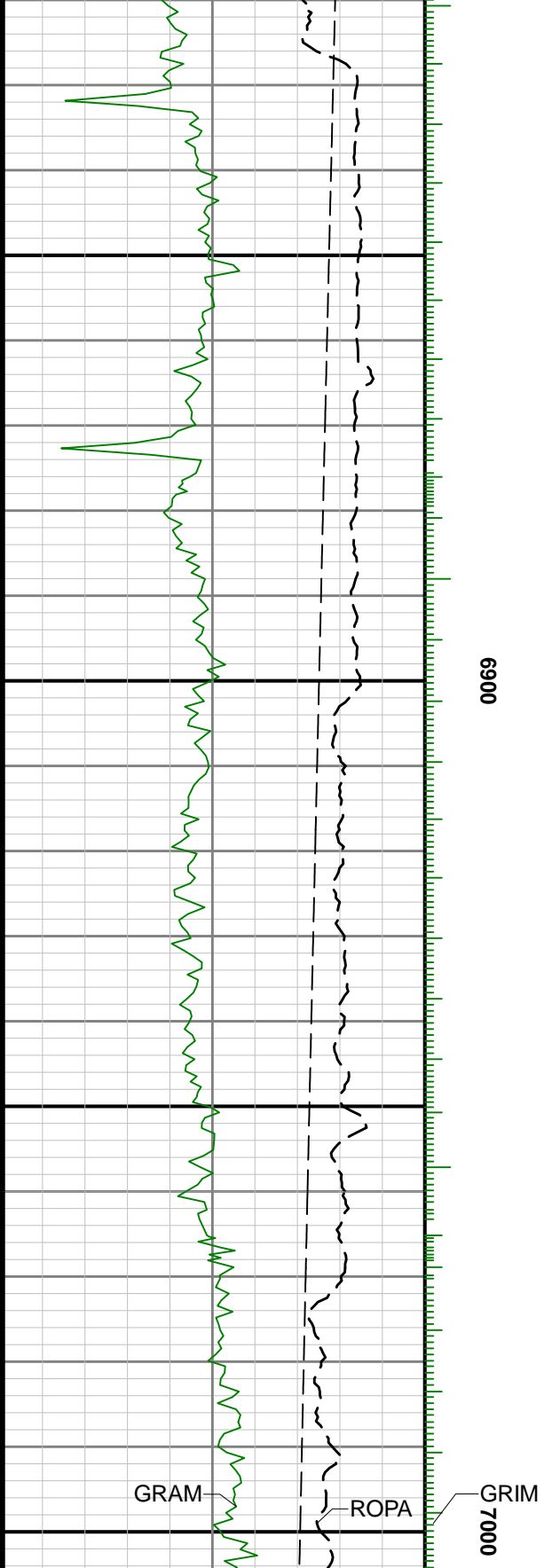


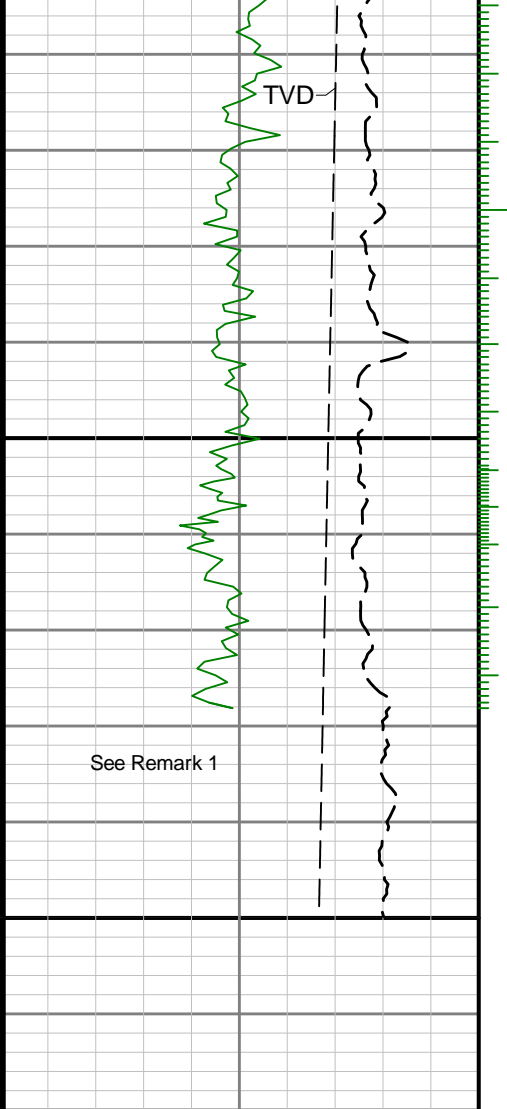
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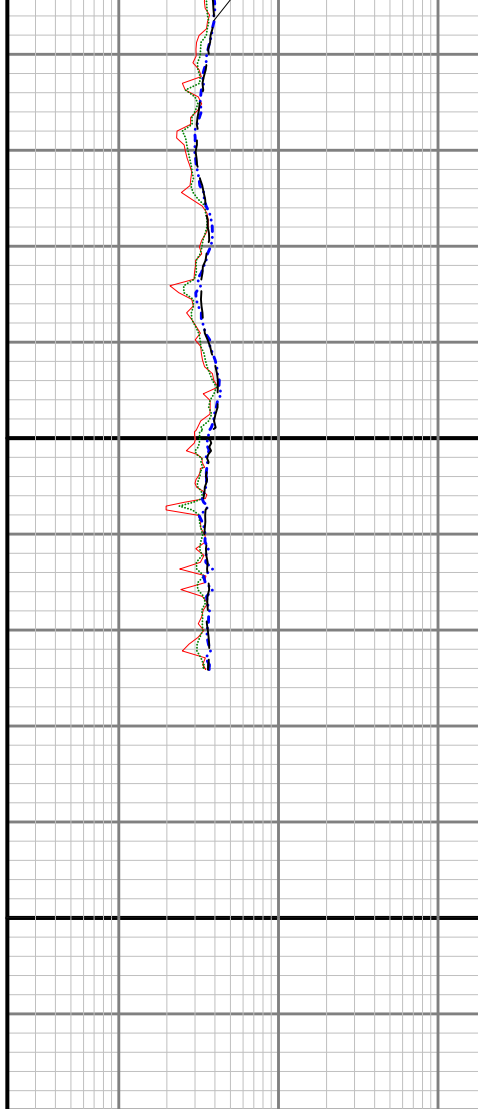






7100

MD 1:240 feet



Gamma Ray - Apparent 0.5 ft Average [GRAM]	
0	300
API	
Depth Averaged ROP 3 ft Average [ROPA]	
1200	0
ft/h	
True Vertical Depth [TVD]	
8000	6000
ft	

Resistivity Phase - Corrected - 2MHz [RPCHM]	
0.2	200
ohm.m	
Resistivity Phase - Corrected - 400kHz [RPCLM]	
0.2	200
ohm.m	
Resistivity Attenuation - Corrected - 2MHz [RACHM]	
0.2	200
ohm.m	
Resistivity Attenuation - Corrected - 400kHz [RACLM]	
0.2	200
ohm.m	

Conductivity Attenuation - Corrected - 400kHz [CACLM]	
4000	0
mmho/m	
Downhole Temperature [TCDM]	
0	250
degF	
Resistivity Time Since Drilled [RPTHM]	
0	600
min	