

MEMORY LOG



Natural Formation Evaluation
Multiple Propagation Resistivity
Gamma Ray

Scale:

1:240 MD

Company: Anadarko

Well: Leinweber Fed 30N-8HZ

Depth Reference:

Field: Wattenburg

Driller's Depth

County: Weld State: United States

Status:

Final Print

Surface Location:

Latitude: 40° 46' 00" N

Other Services:

API No: 05123442010000

Longitude: 101° 05' 00" W

UTM: N/A

Directional

Job ID: 8917888

SEC: 11

TWN: 1N

RGE: 67W

Permanent Datum (P.D.): Ground Level

Elevation: 4958.00 ft

KB: N/A

Log Measured From: Rig Floor

Above P.D. 17.00 ft

DF: 4975.00 ft

GL: 4958.00 ft

Dates

Interval Logged

Magnetic Field Reference

Date From: 2018-01-10

Top: (ft) 1841.00

Azi Reference North: True

Dip Angle: (deg) 66.47

Date To: 2018-01-15

Bottom: (ft) 6730.00

Total Magnetic Field Strength: (nT) 52410

Spud Date: 2018-01-11

Mag to Reference North Correction: (deg) 8.16 E

Borehole Record

Casing Record

Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
----------------	-----------	---------	-----------	----------------	-----------	---------

13.500	17.00	1841.00	9.625	25.00	17.00	1834.00
--------	-------	---------	-------	-------	-------	---------

8.500	1841.00	18458.00				
-------	---------	----------	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

Mud Record

Deviation Record

Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Azi (Start)	Inc Azi (End)
------	-----------	---------	----------------	---------------	-------------------	-----------------

Diesel-Oil Based Mud	1841.00	18458.00	8.500	16617.00	0.37 305.46	93.58 91.15
----------------------	---------	----------	-------	----------	---------------	---------------

--	--	--	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

--	--	--	--	--	--	--

Acquisition System Software Version Other

Baker Hughes Cadence

RT4.1

Rig: XTreme 22

Unit: D & E

PlotStudio 4.1.7763.3

Contractor: XTrime

RMD

District:

©"4239"Dcmgt"Jwi jgu."c"IG"eqorcp{."NNE"ó"Cnn"tki jvu"tgugtxg f0"Dcmgt"Jwi jgu."c"IG"eqorcp{."NNE"cpf"kvu"chhknkcvgu"*ôDJIGö+"rtq xkfgu"vjku"kphqtocvkqp"qp"cp"ôcu"kuö"dcuku"hqt"igpgtcn"kphqtocvkqp"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 (h)
						Top	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	8.500	PDC	2.00	Steerable	1841.00	6730.00	1841.00	6730.00	2018-01-13 23:13	2018-01-15 20:27	90.13

Crew

Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite	Name	Arrive Wellsite	Depart Wellsite
Teni Onafowokan	2018-01-11	2018-01-15	Will Roth	2018-01-11	2018-01-13	Jeff Roth	2018-01-14	2018-01-15

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+ (%)
2018-01-11 06:17	1	1841.00	Diesel-Oil Based Mud	9.1	18	N/A	N/A	73.3/26.7	Active Pit	40000	0.00
2018-01-12 19:00	1	7340.00	Diesel-Oil Based Mud	8.9	15	N/A	N/A	68/32	Active Pit	41000	0.00
2018-01-13 19:00	1	11314.00	Diesel-Oil Based Mud	9.2	16	N/A	N/A	66/34	Active Pit	41000	0.00

Mud Resistivity Record

Date / Time	Run No.	Measured Depth (ft)	Surface Temp (degF)	Rm (ohm.m)	Rmf (ohm.m)	Rmc (ohm.m)	BHCT (degF)	Rm @ BHCT (ohm.m)	Rmf @ BHCT (ohm.m)	Rmc @ BHCT (ohm.m)
2018-01-14 04:16	1	14307.00	80.0	100.000	N/A	N/A	233.0	100.000	N/A	N/A
2018-01-15 04:18	1	15860.00	79.0	100.000	N/A	N/A	239.0	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)
1	OnTrak	12382038	Pressure	0.92	11721.62	6.750	0.000
1	OnTrak	12382038	Gamma (double)	1.81	11722.51	6.750	0.000
1	OnTrak	12382038	Resistivity (4tx)	5.85	11726.55	6.750	0.000
1	OnTrak	12382038	Directional (mag)	11.64	11732.34	6.750	0.000

Service and Tool Mnemonics

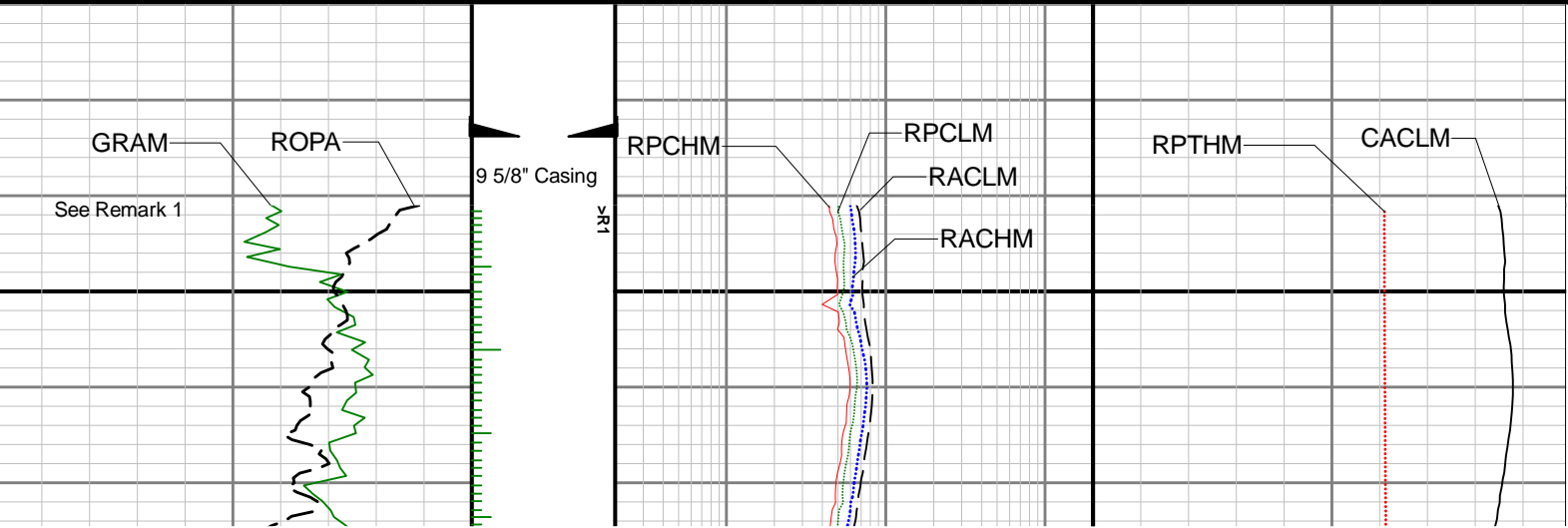
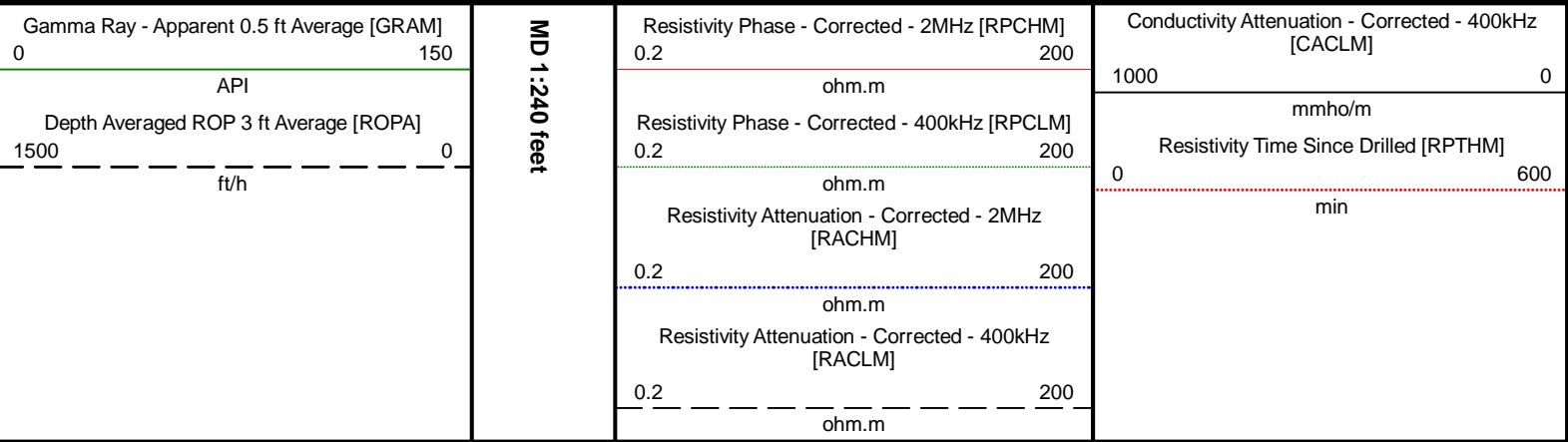
Mnemonic	Name	Description
OTK	OnTrak	Sensor Sub (Inc, Azi, Temp, Azimuthal GR, Res, AP, VSS), OnTrak Platform
BCPM	BCPM	Bi-Directional Communication and Power Module, OnTrak Platform

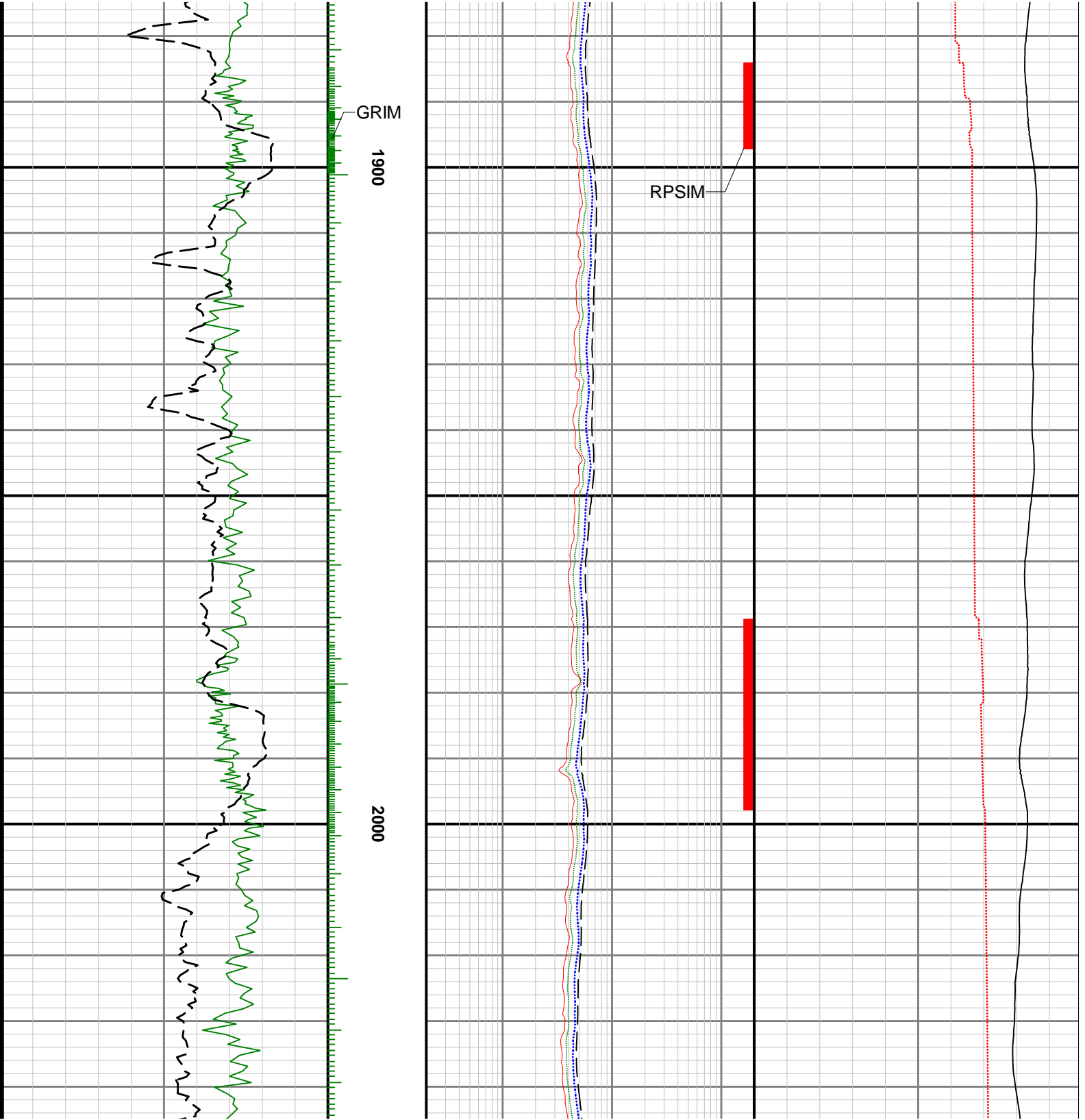
Comments

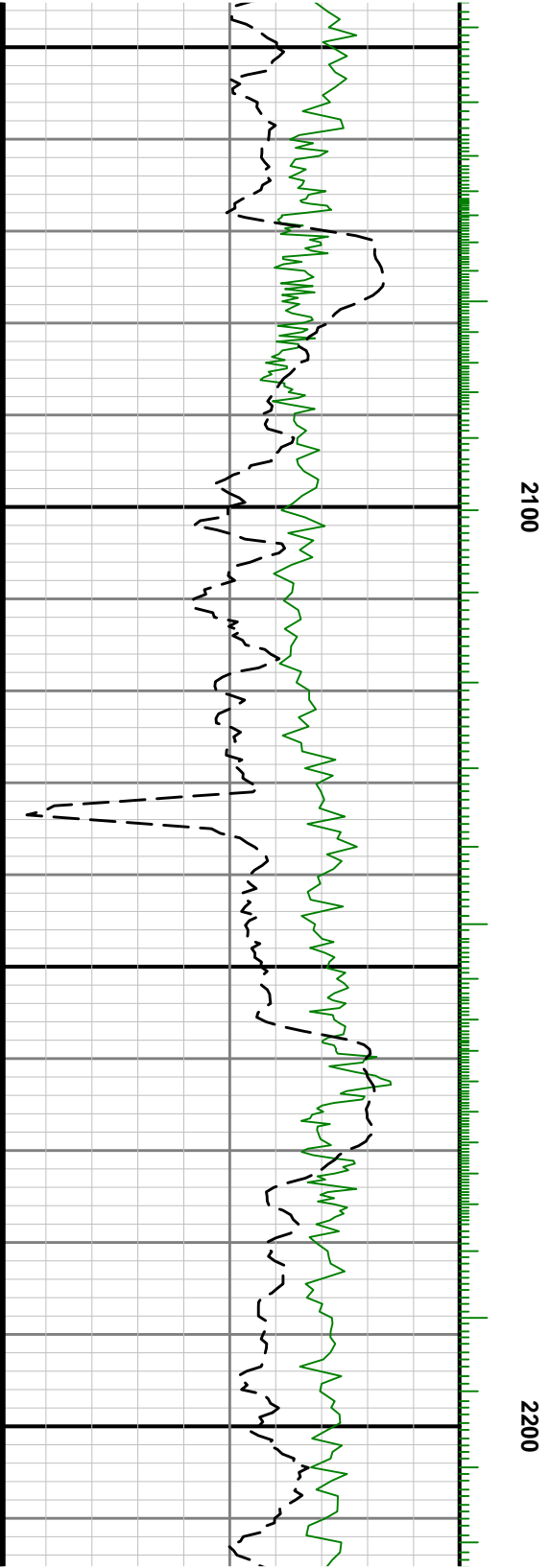
- 1
- Depth measurements were obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
- 2
- A sliding indicator is shown to the right edge of track 2 as a heavy line. The indicator has been depth-shifted to the Resistivity sensor offset to correspond with Resistivity data acquired while sliding.
- 3
- Baker Hughes run 1 utilized 6.50 inch OnTrak services (Resistivity, Gamma Ray and Directional) behind a 8 1/2 inch bit and steerable assembly from 1841 to 6730 feet MD (1829 to 6705 feet TVD).
- 4
- Numerous gaps are present throughout the log due to surveying while on bottom drilling ahead.
- 5
- Gamma Ray (GRAX) scale is presented 0 to 200 API per customer request.

Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	1841.00	8.500	1	Baker Hughes logging services began 1841 feet MD (1830 feet TVD) per customer request.

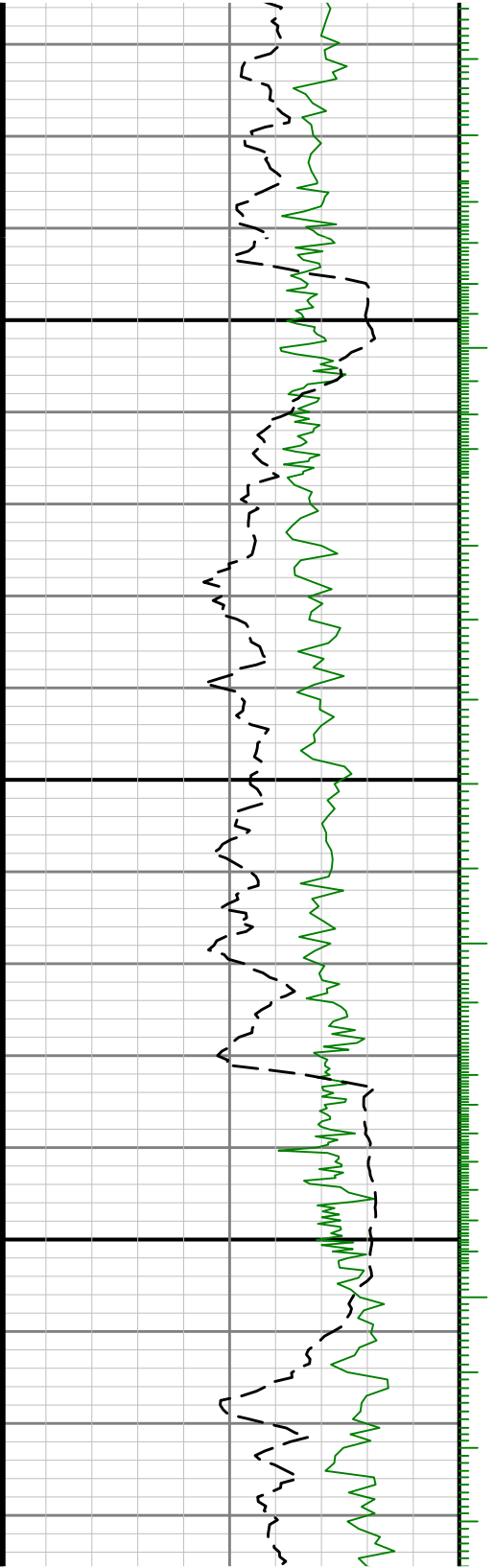


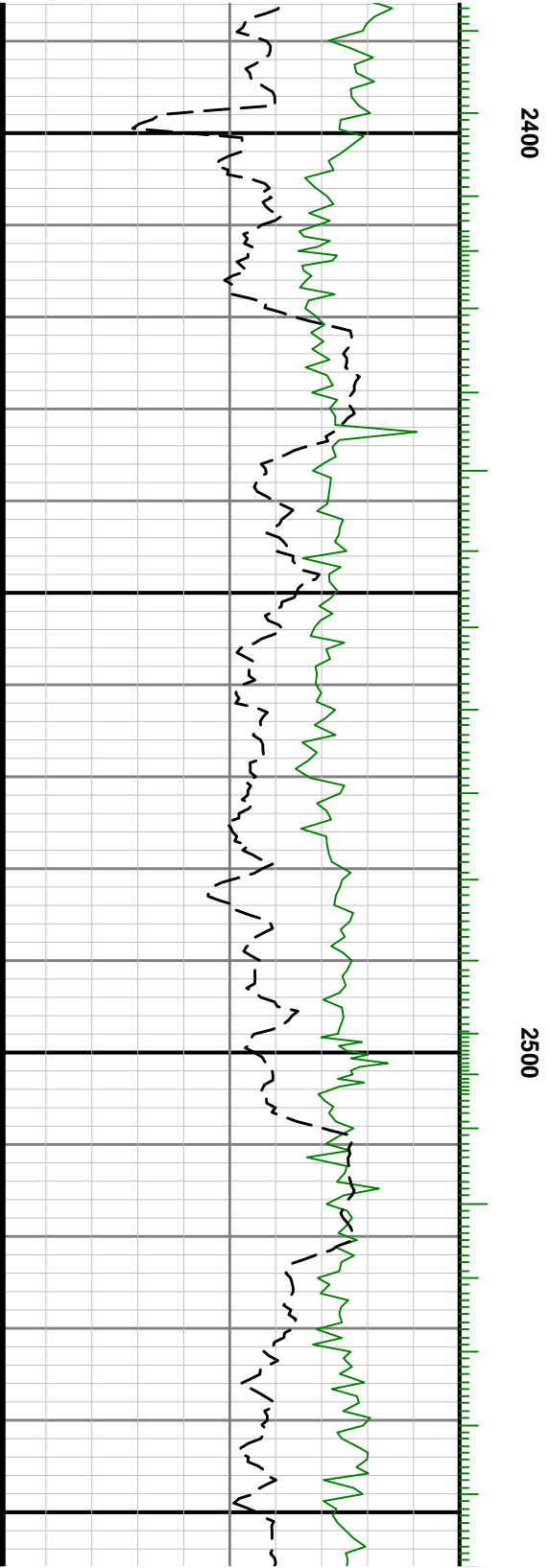


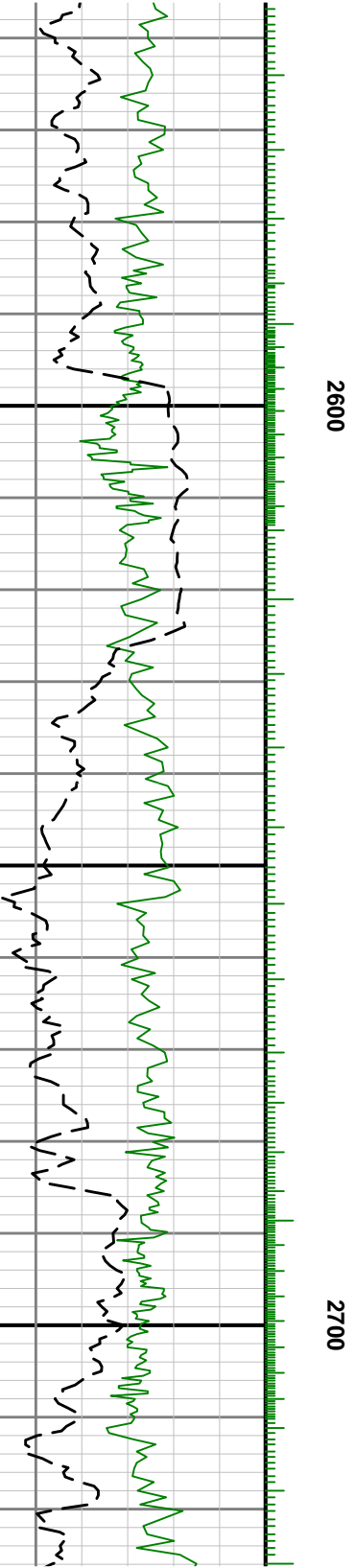
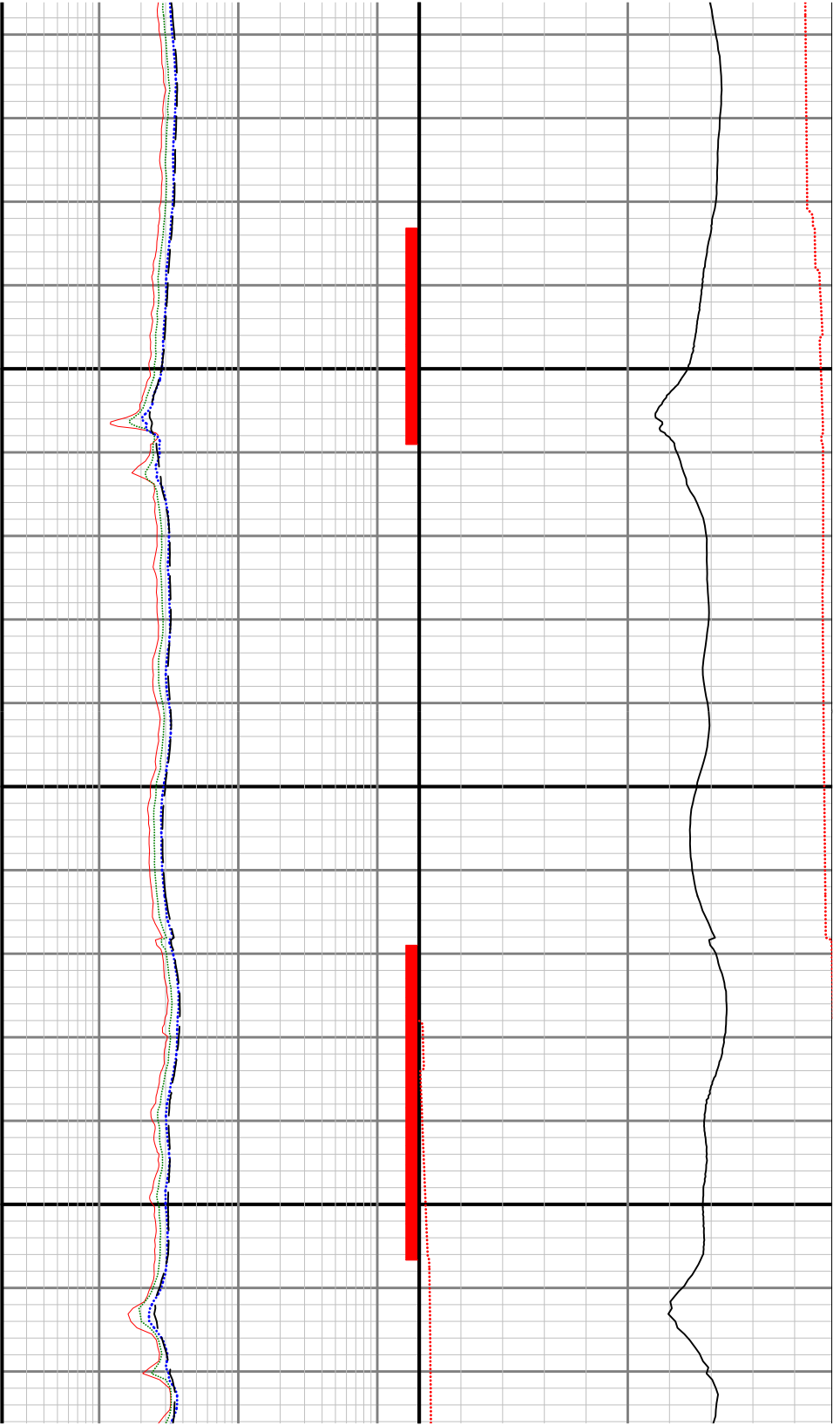


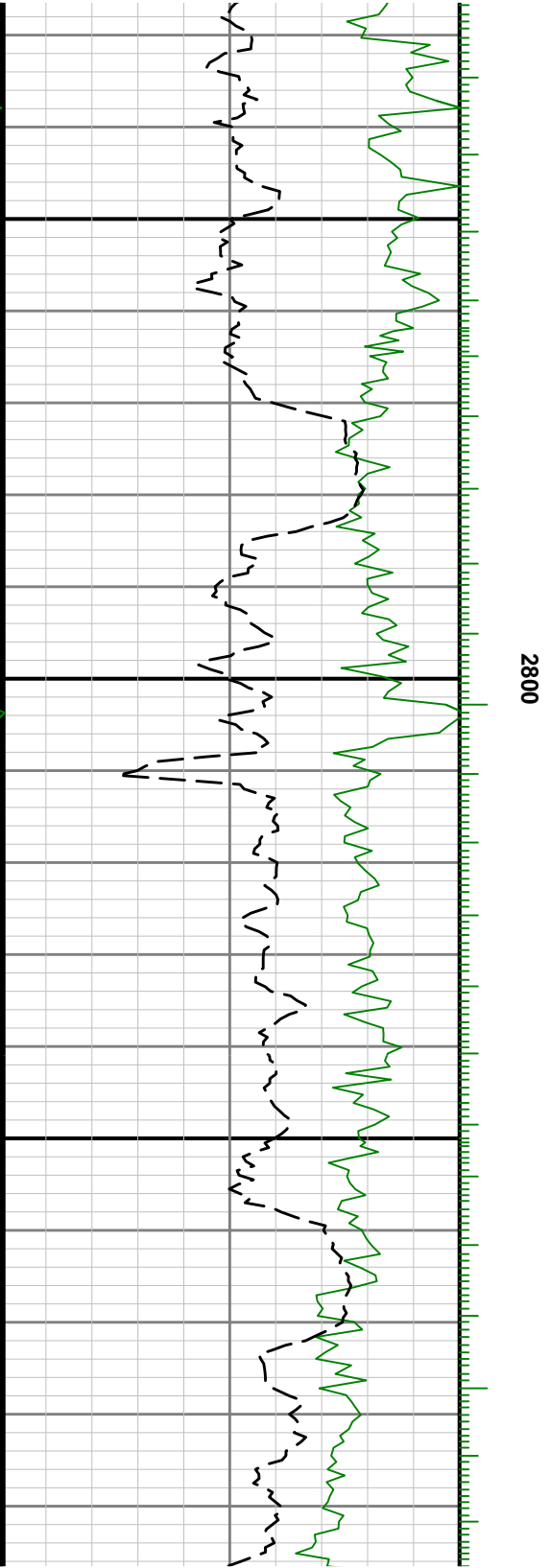


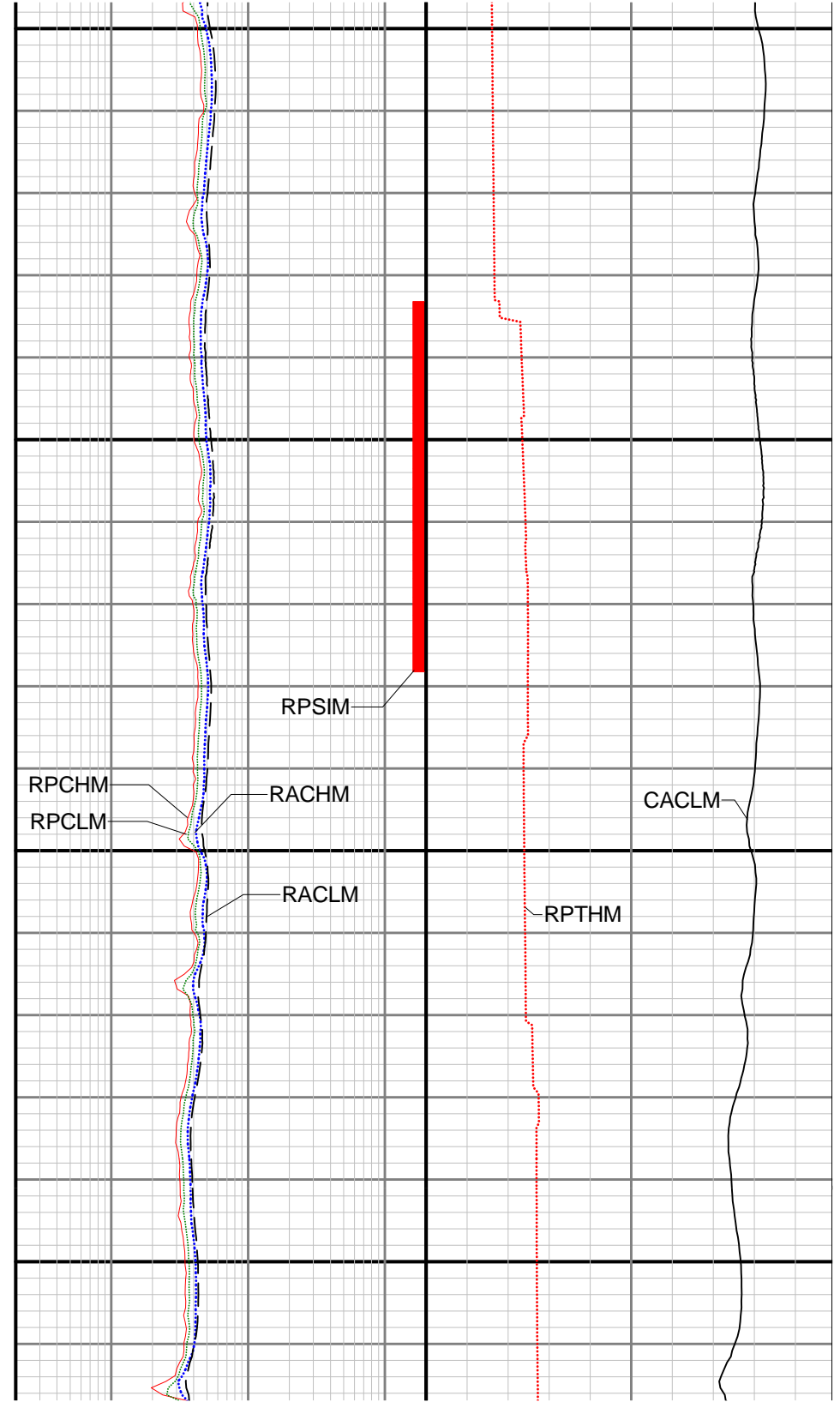
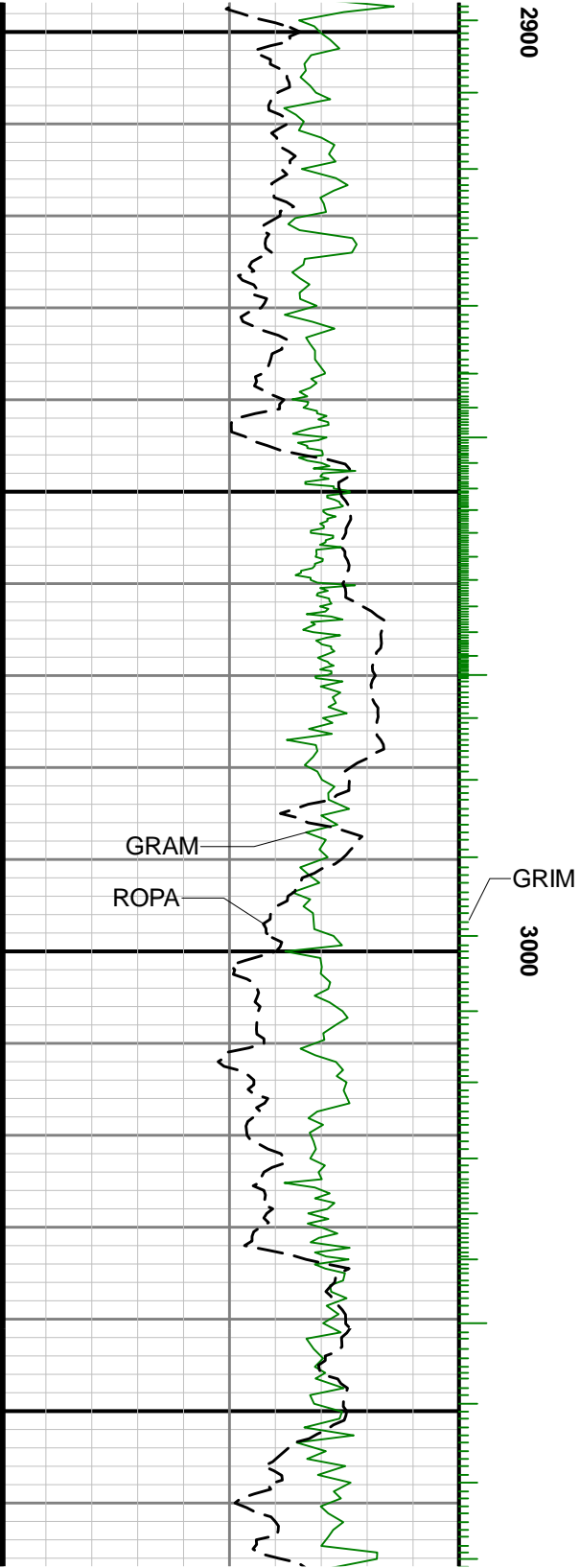
2300

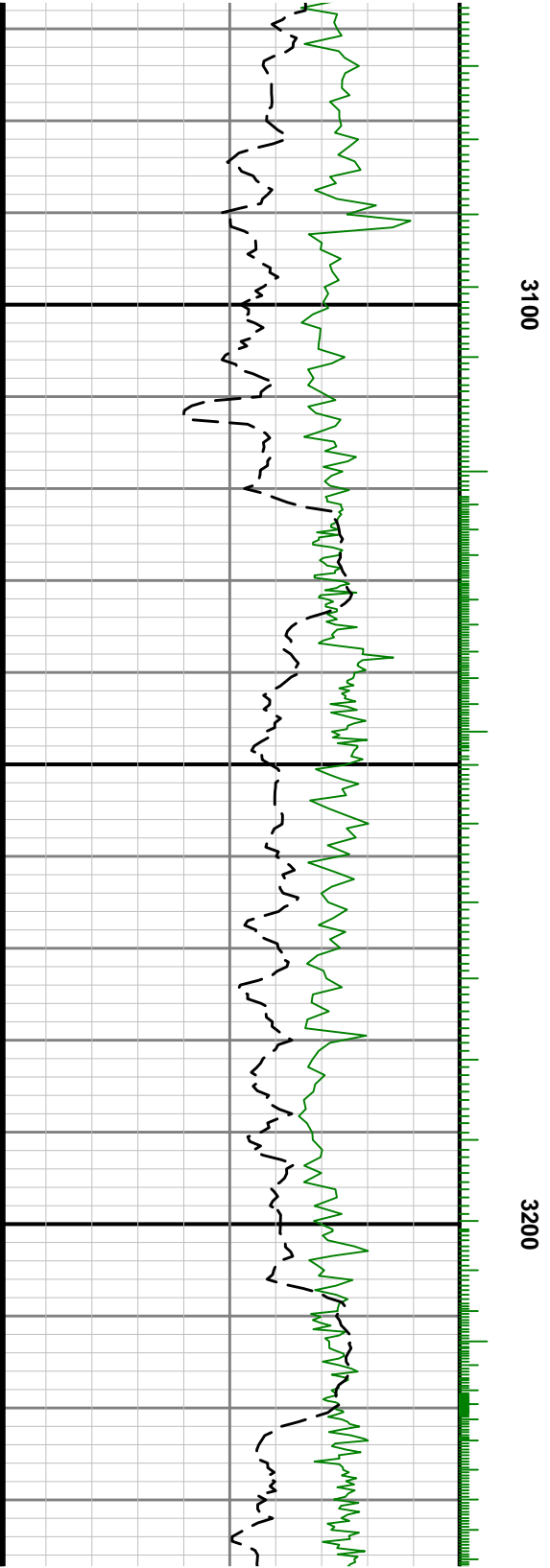
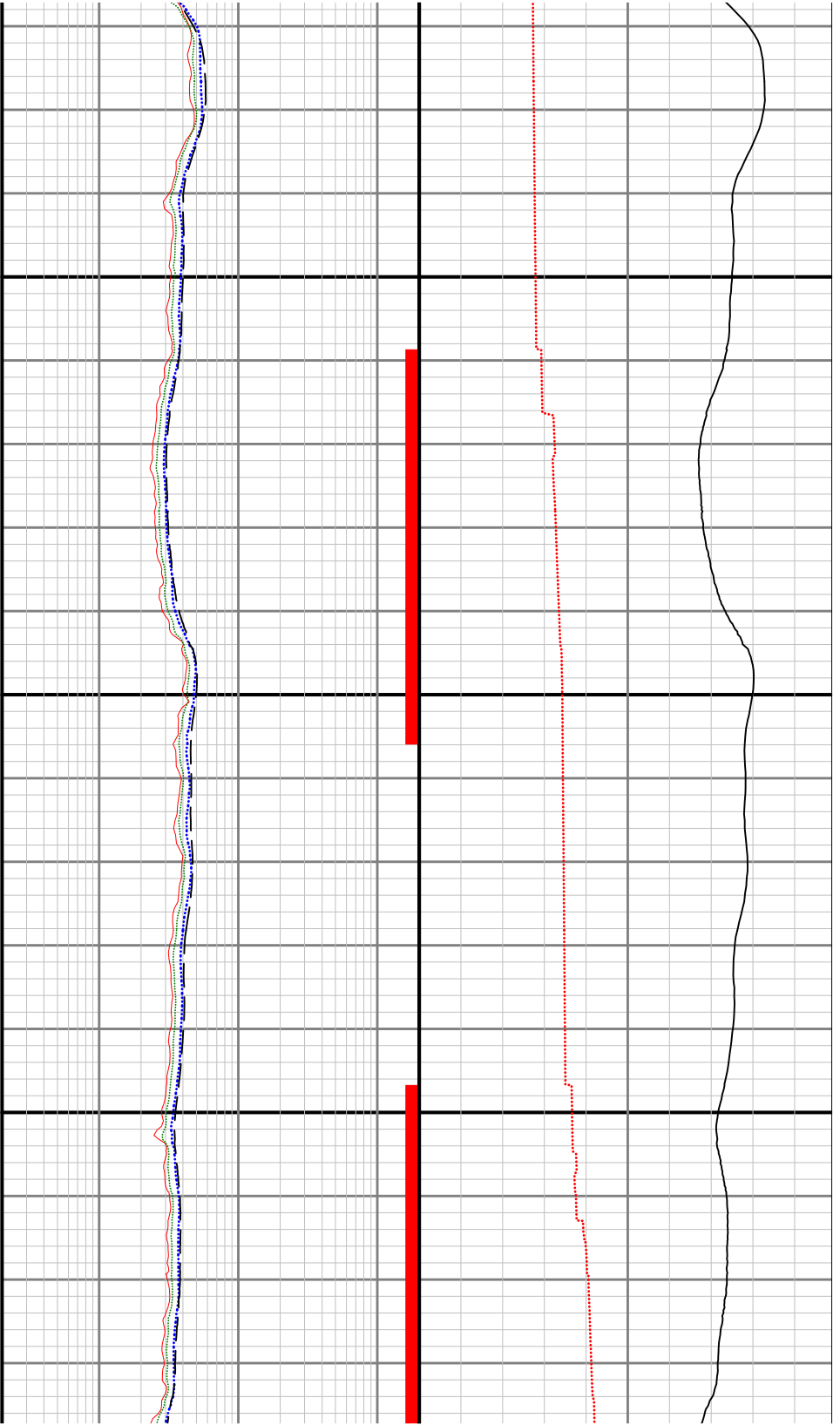


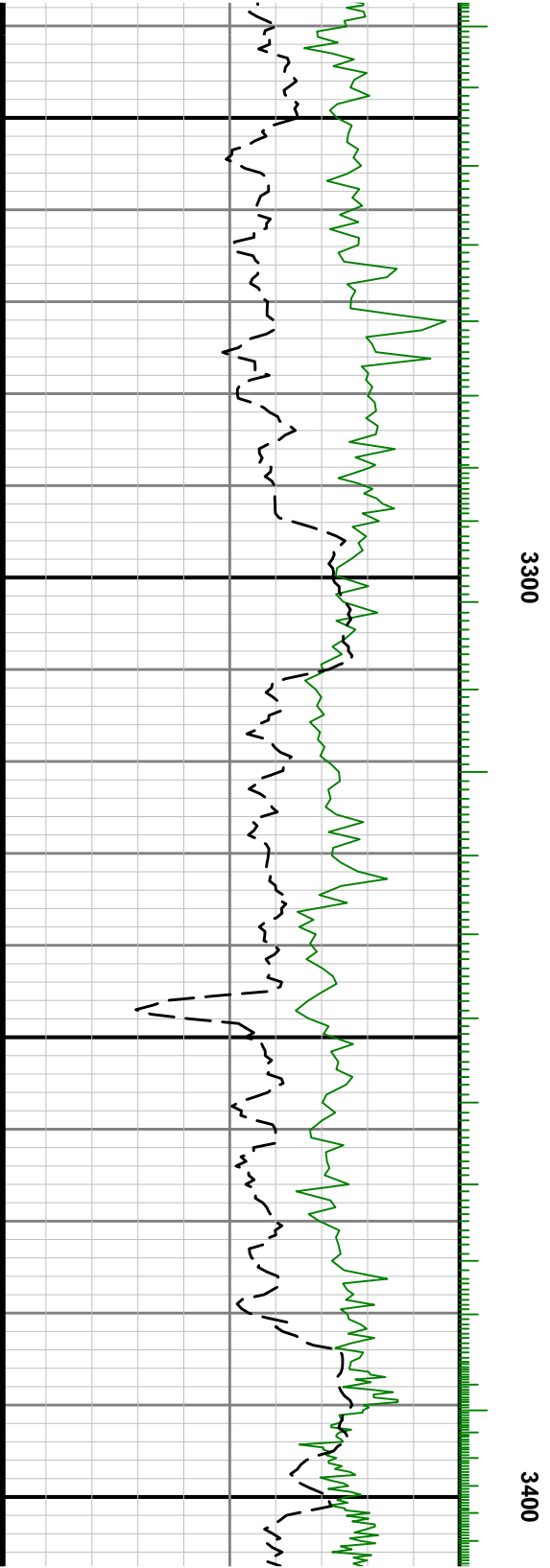
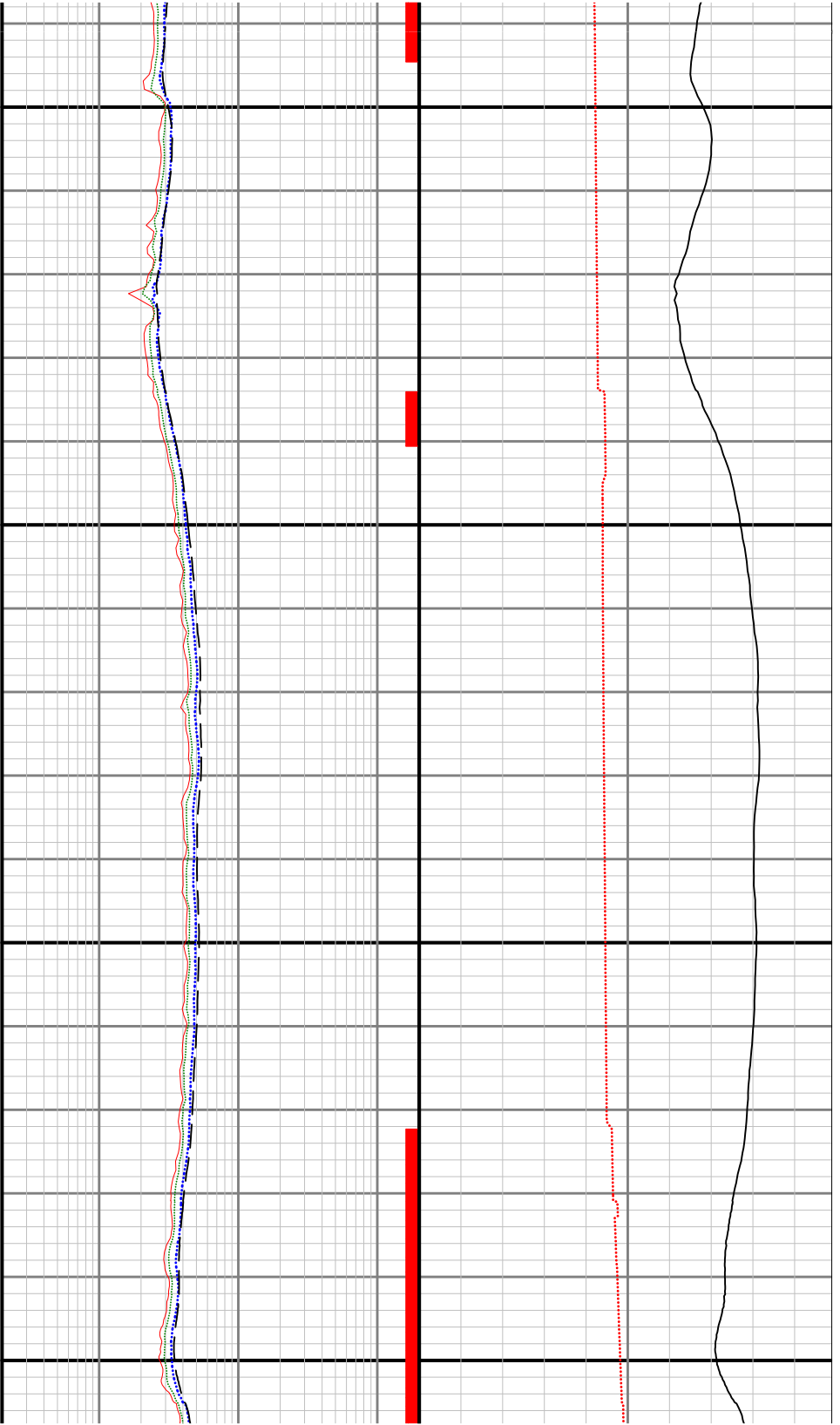


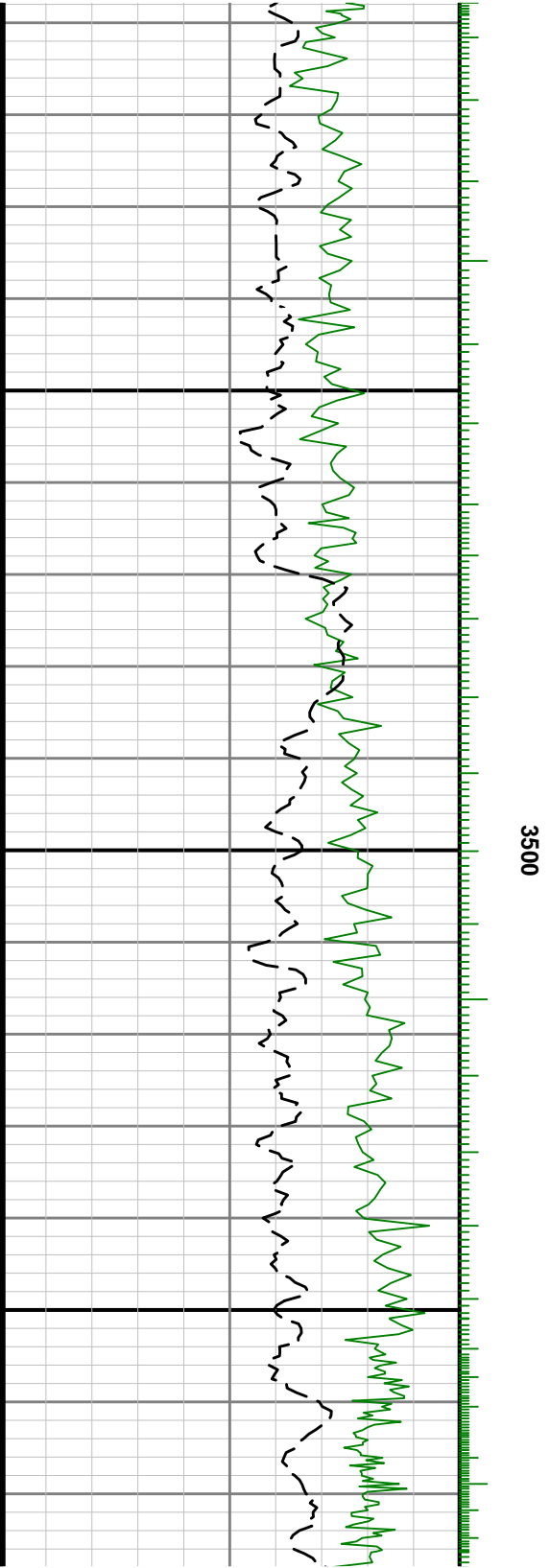
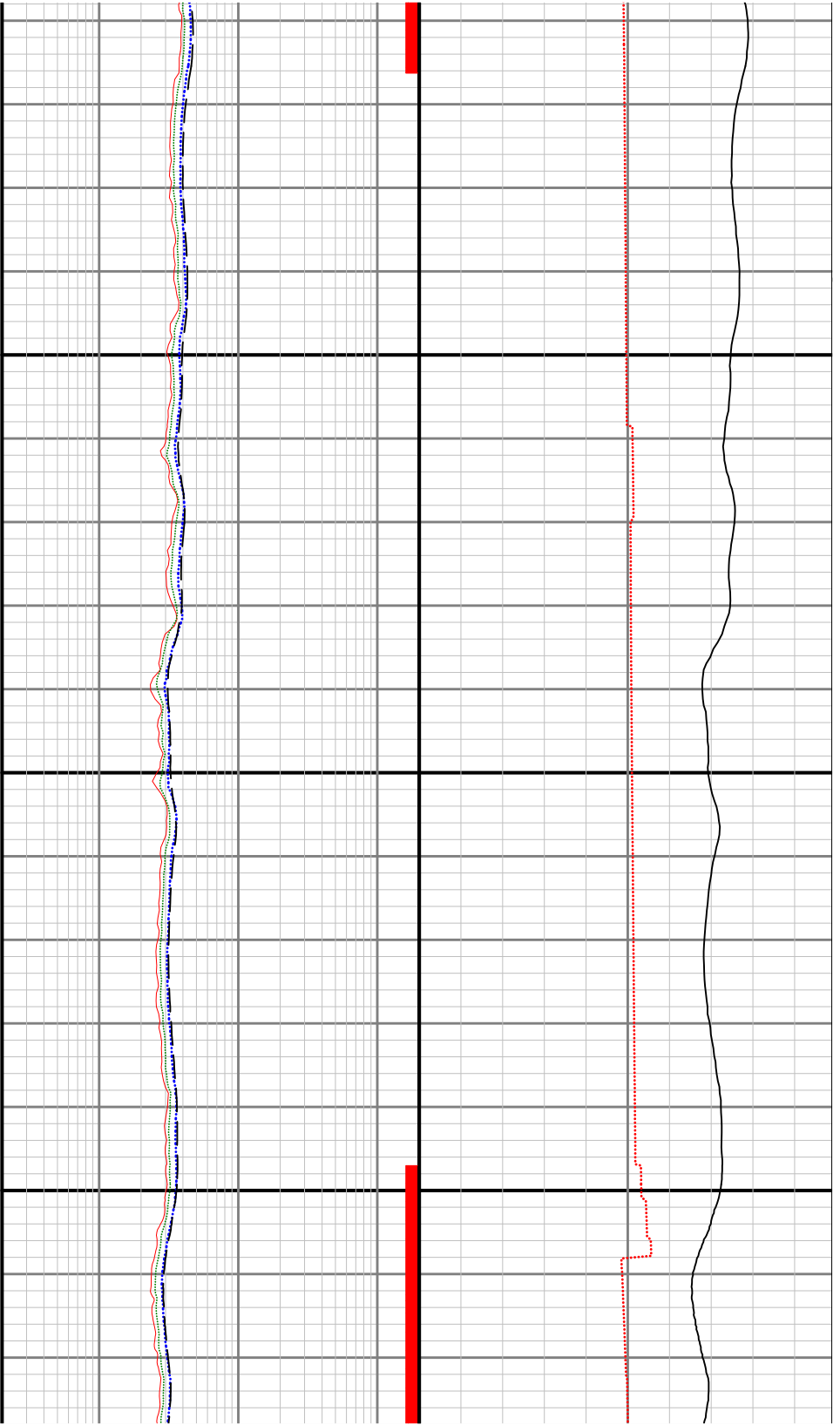


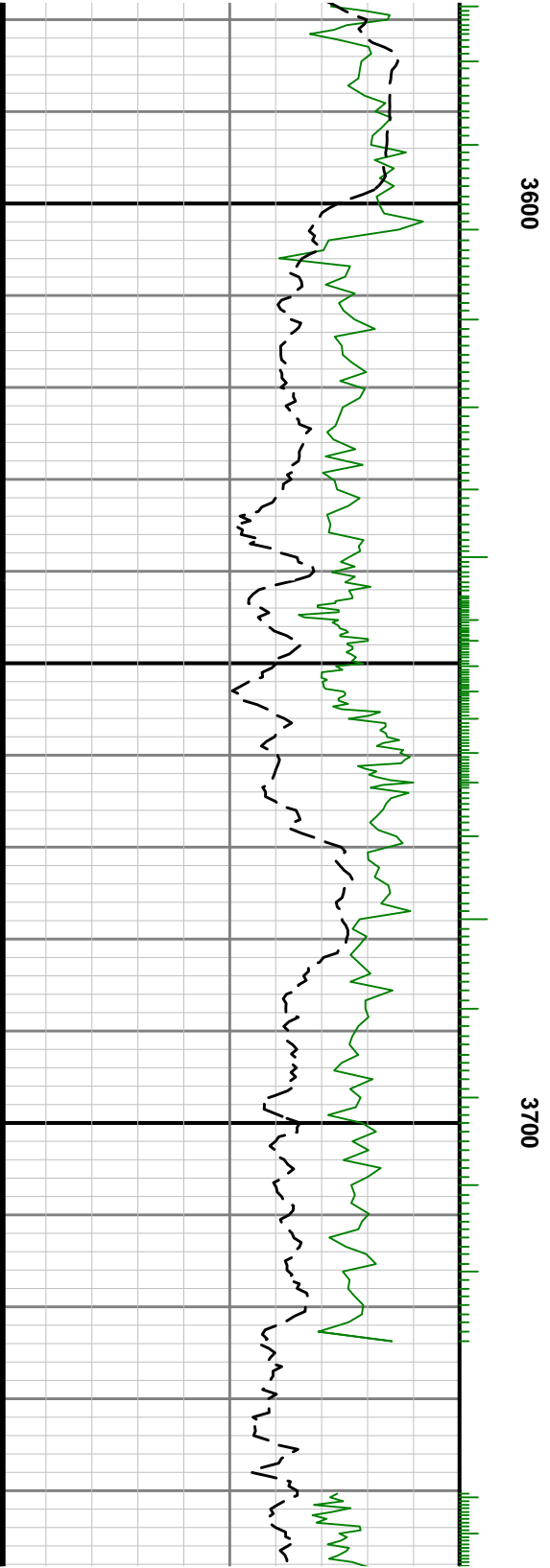
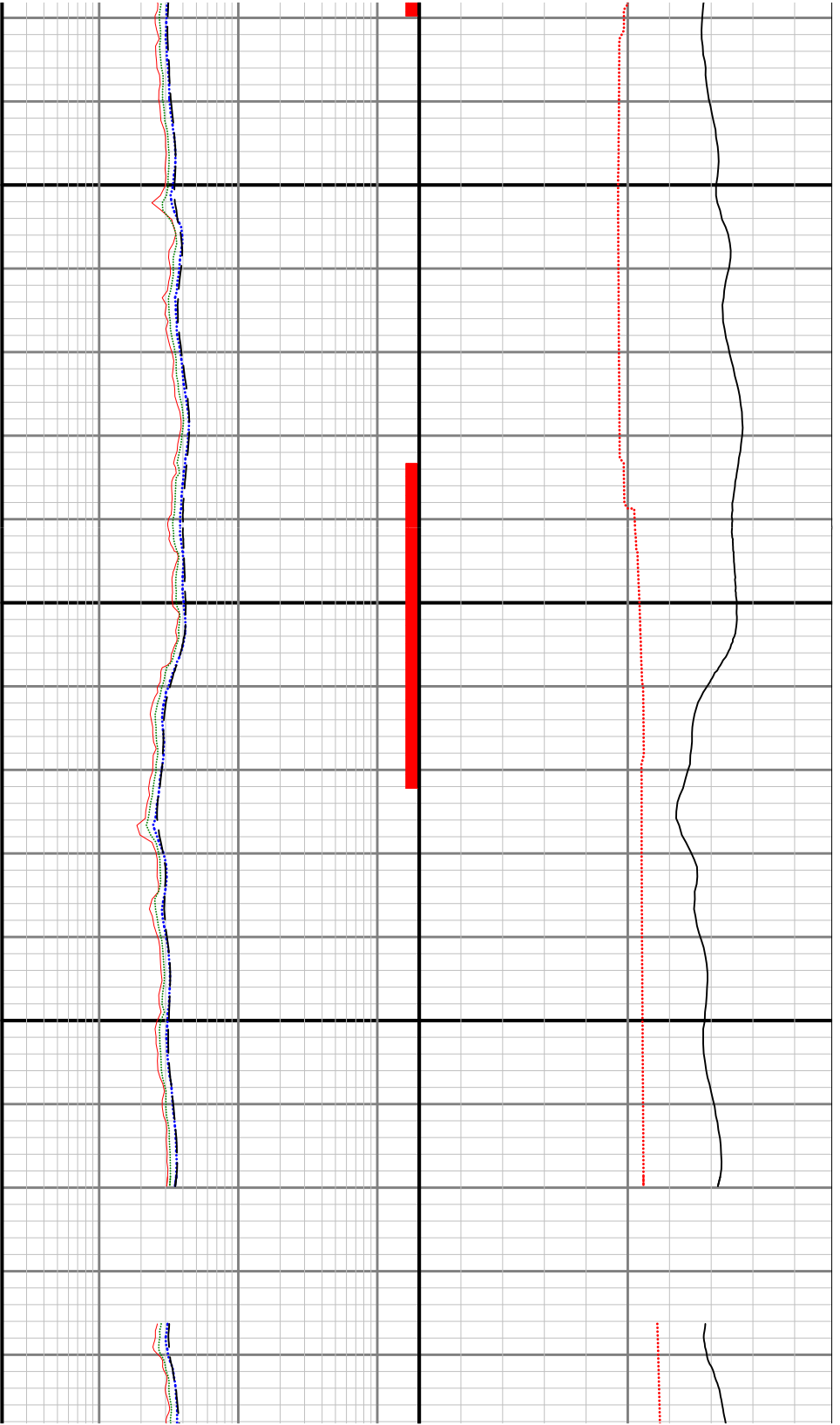


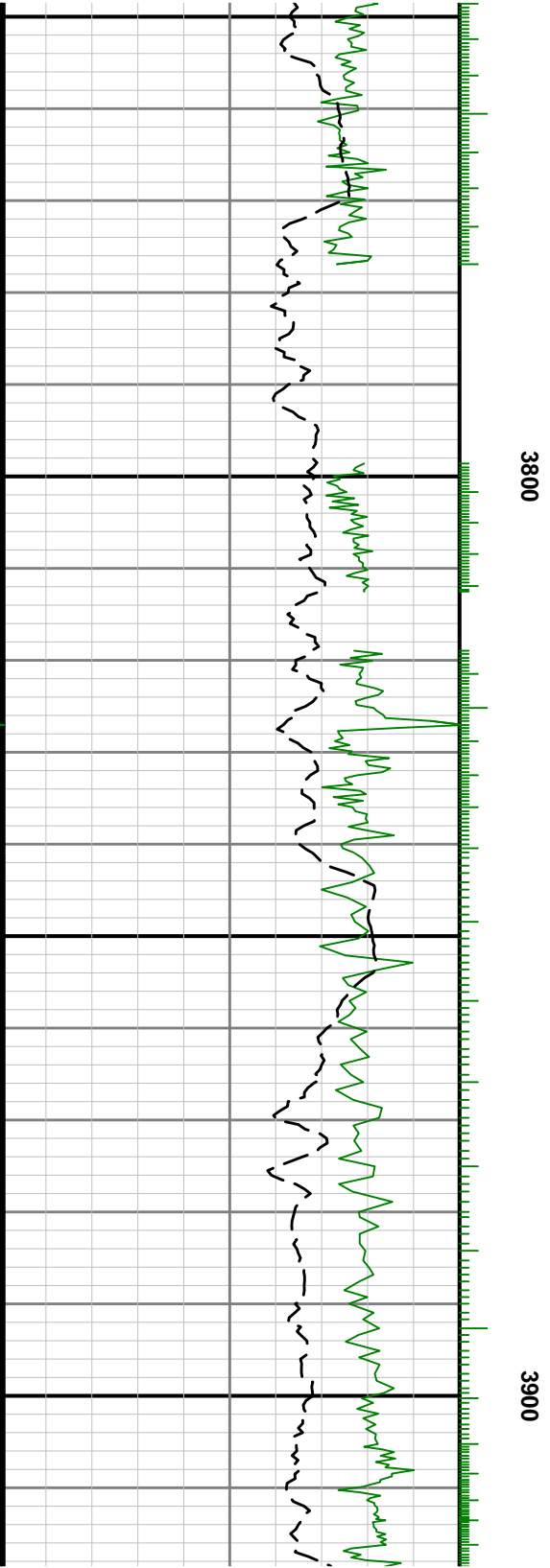
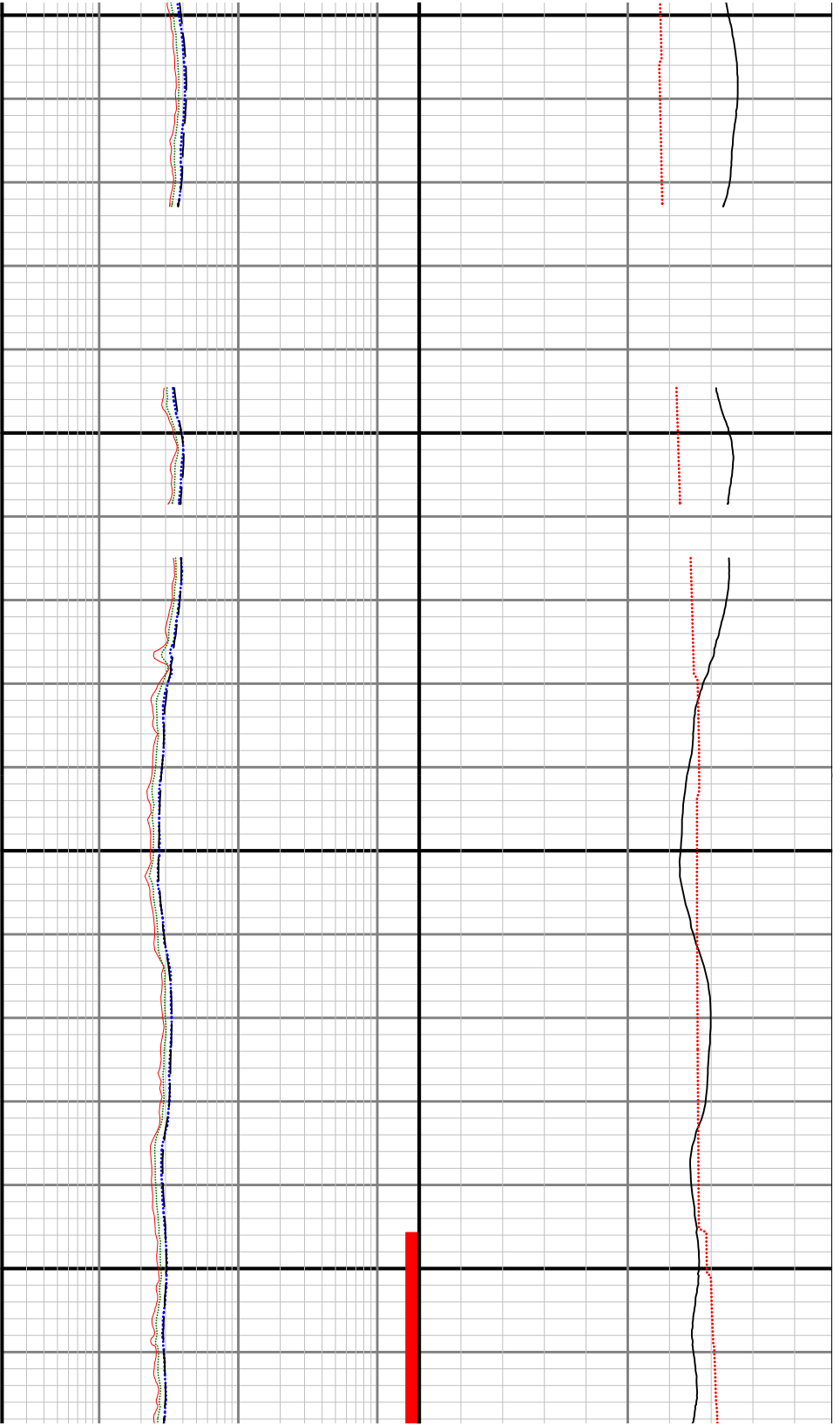


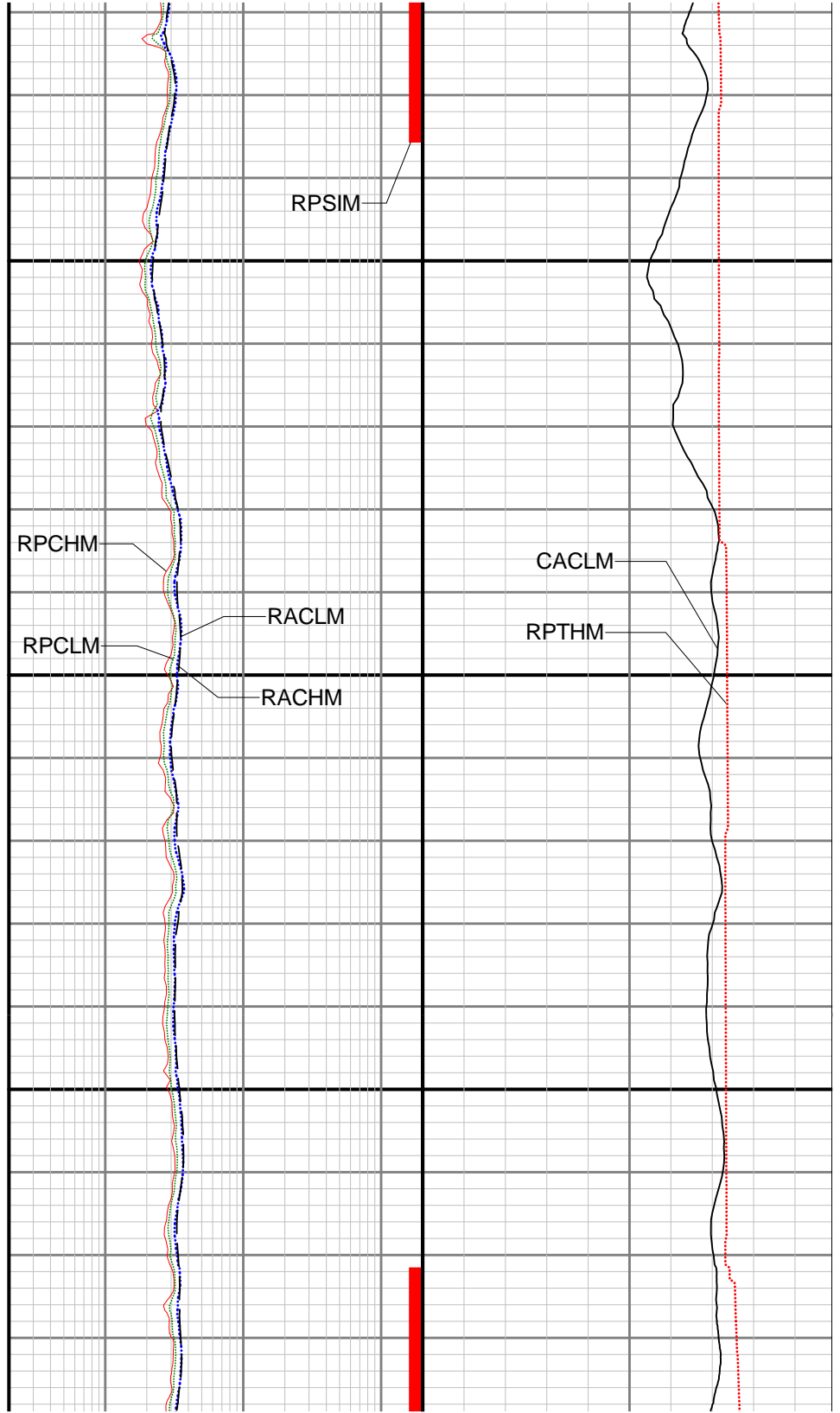
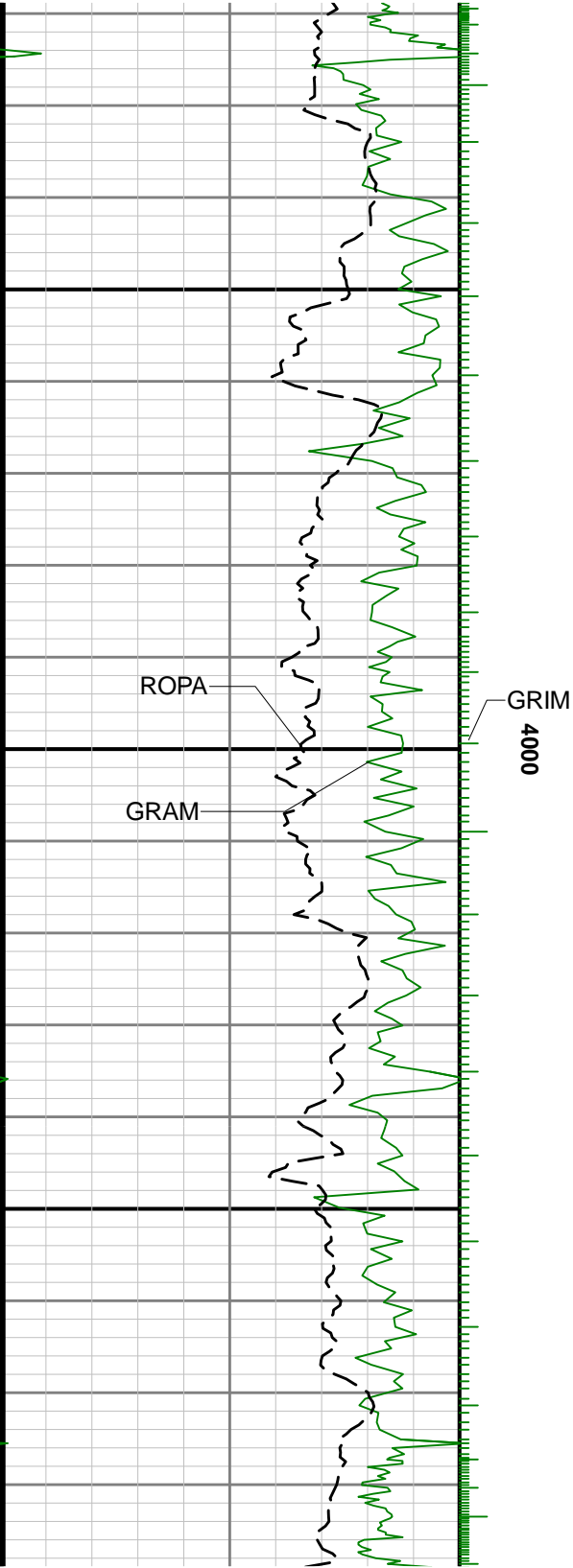


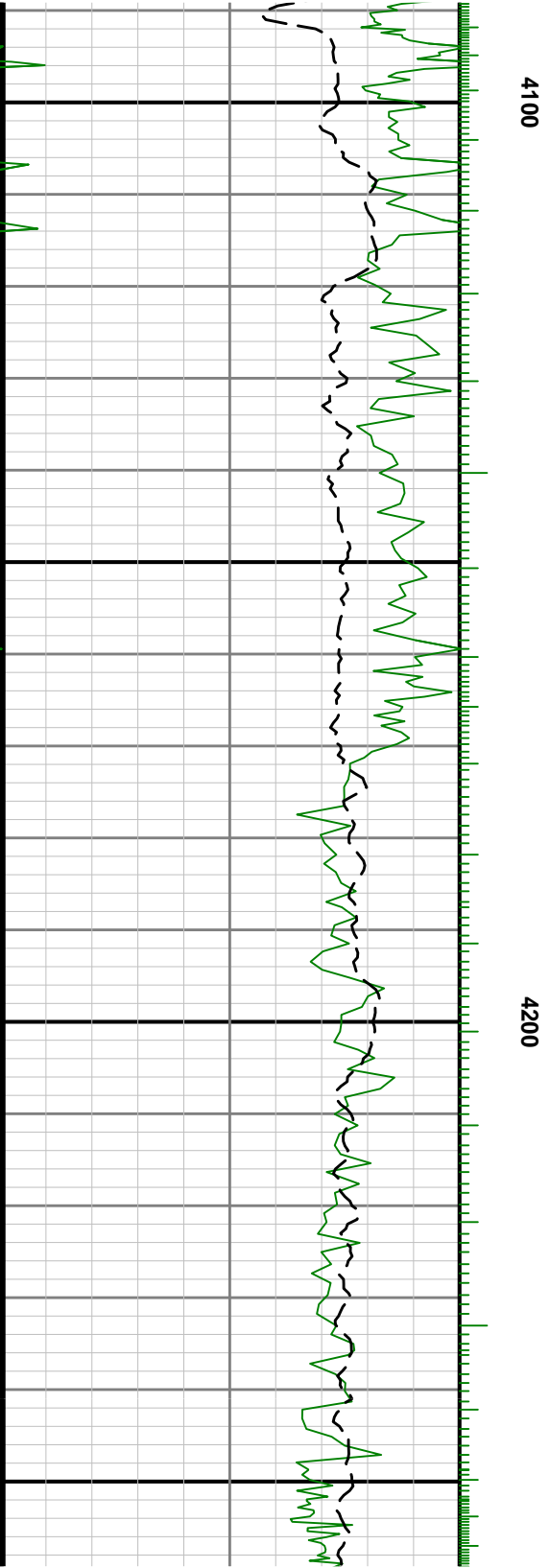
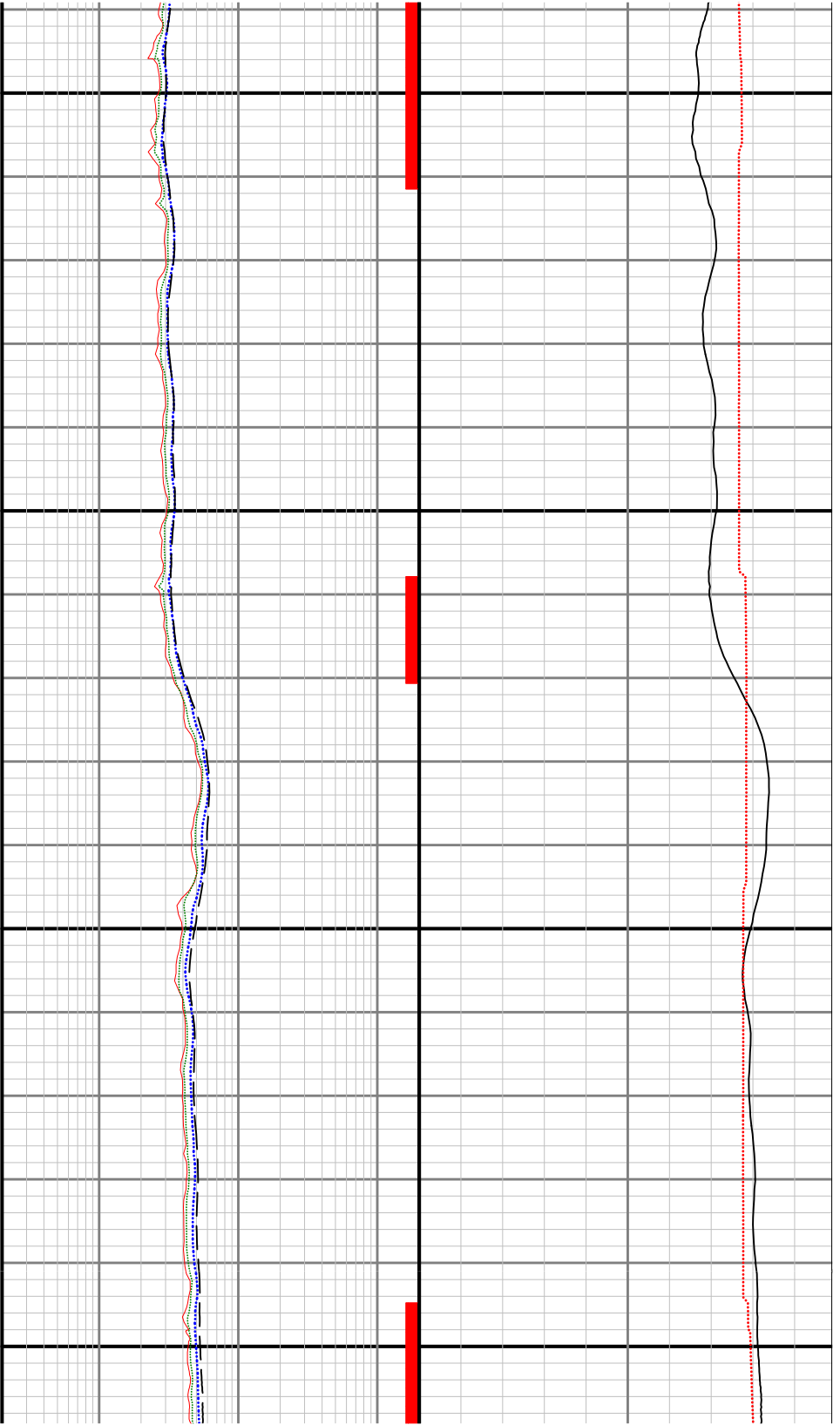


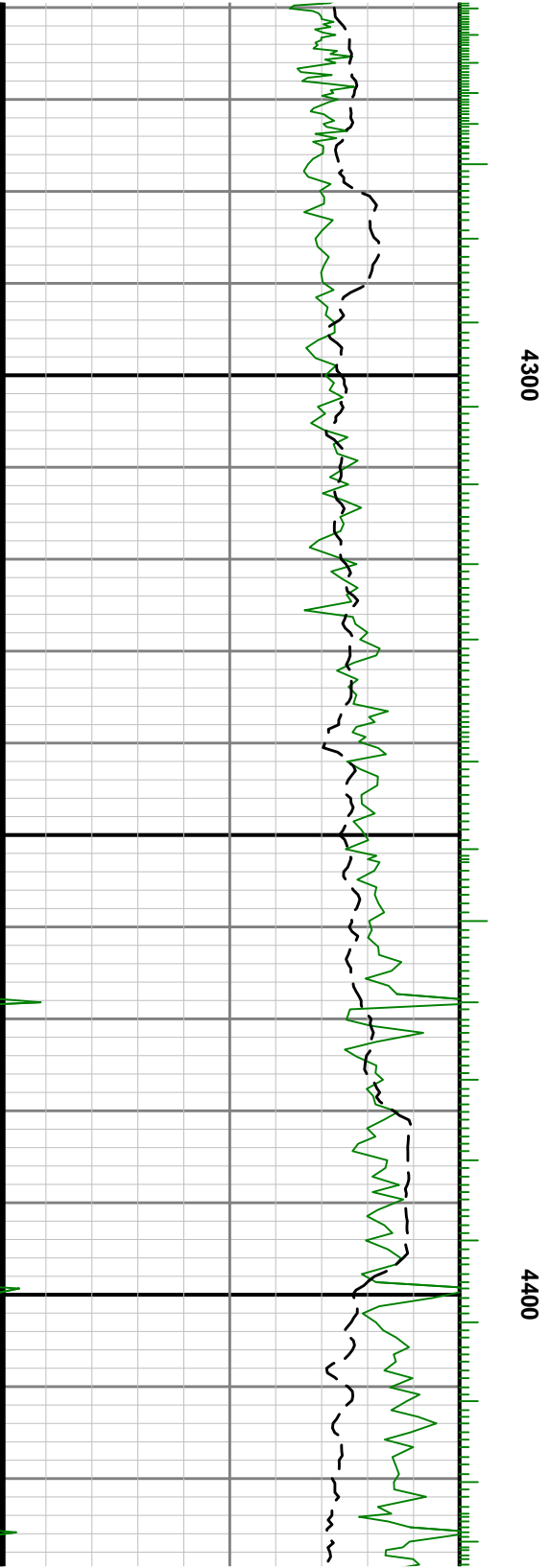


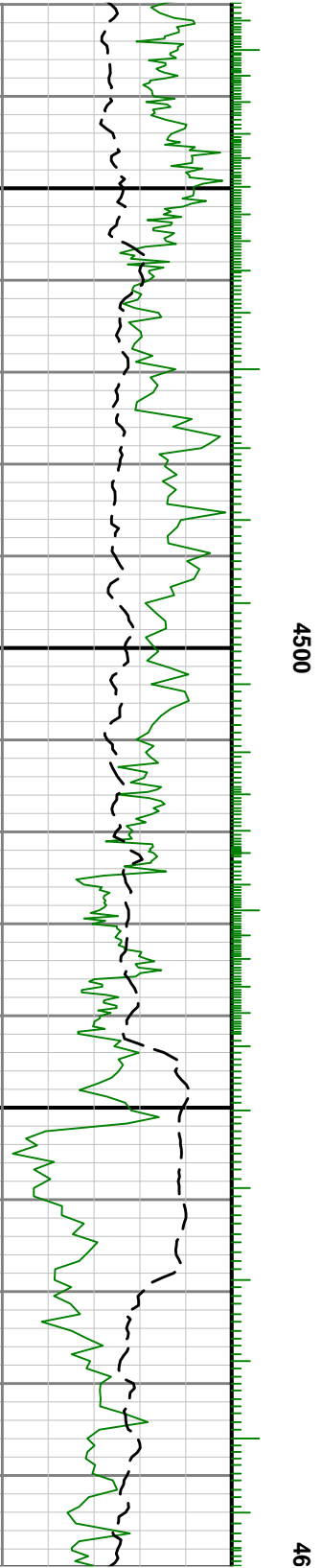


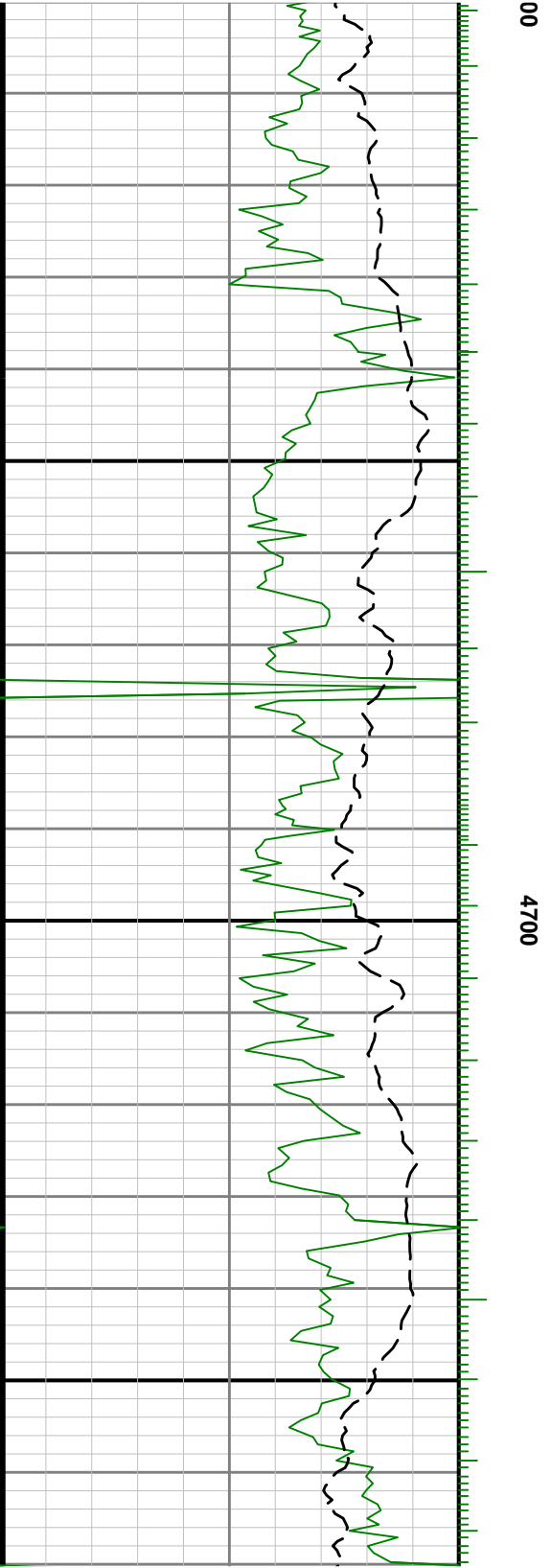
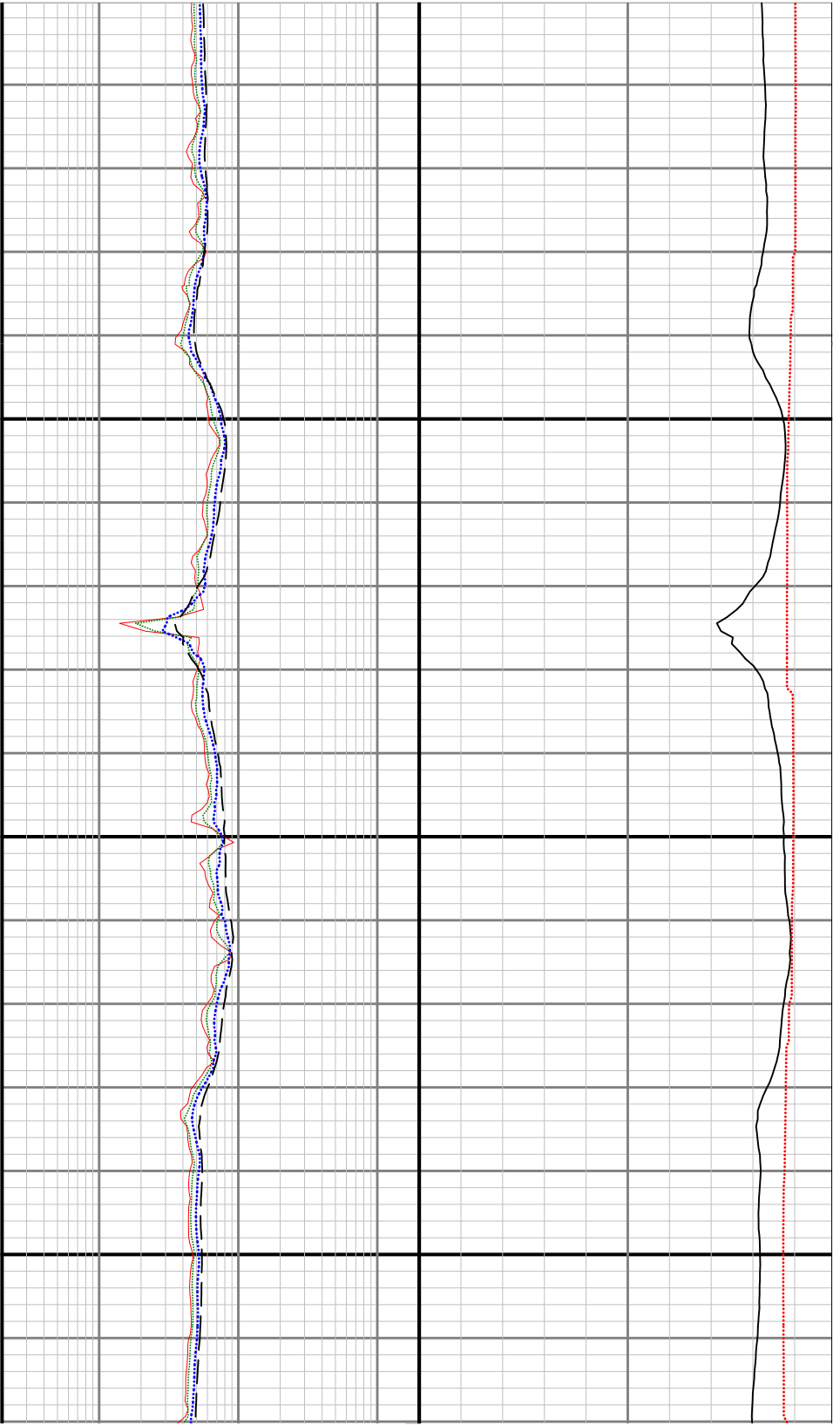


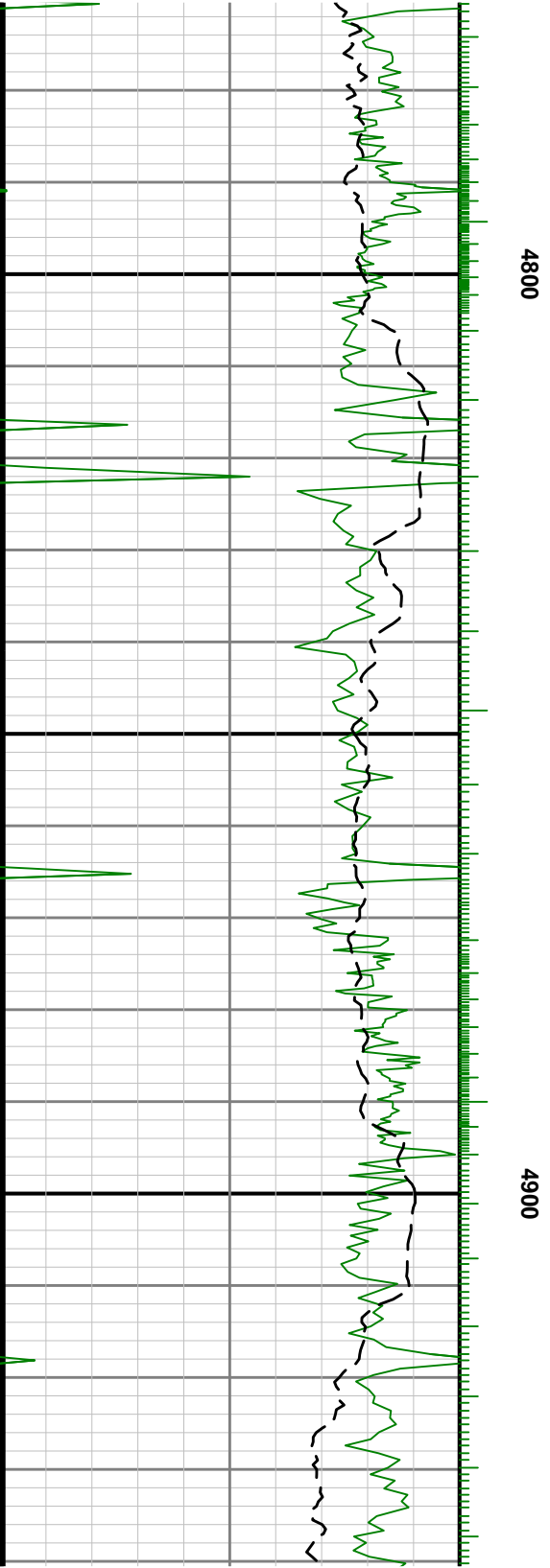


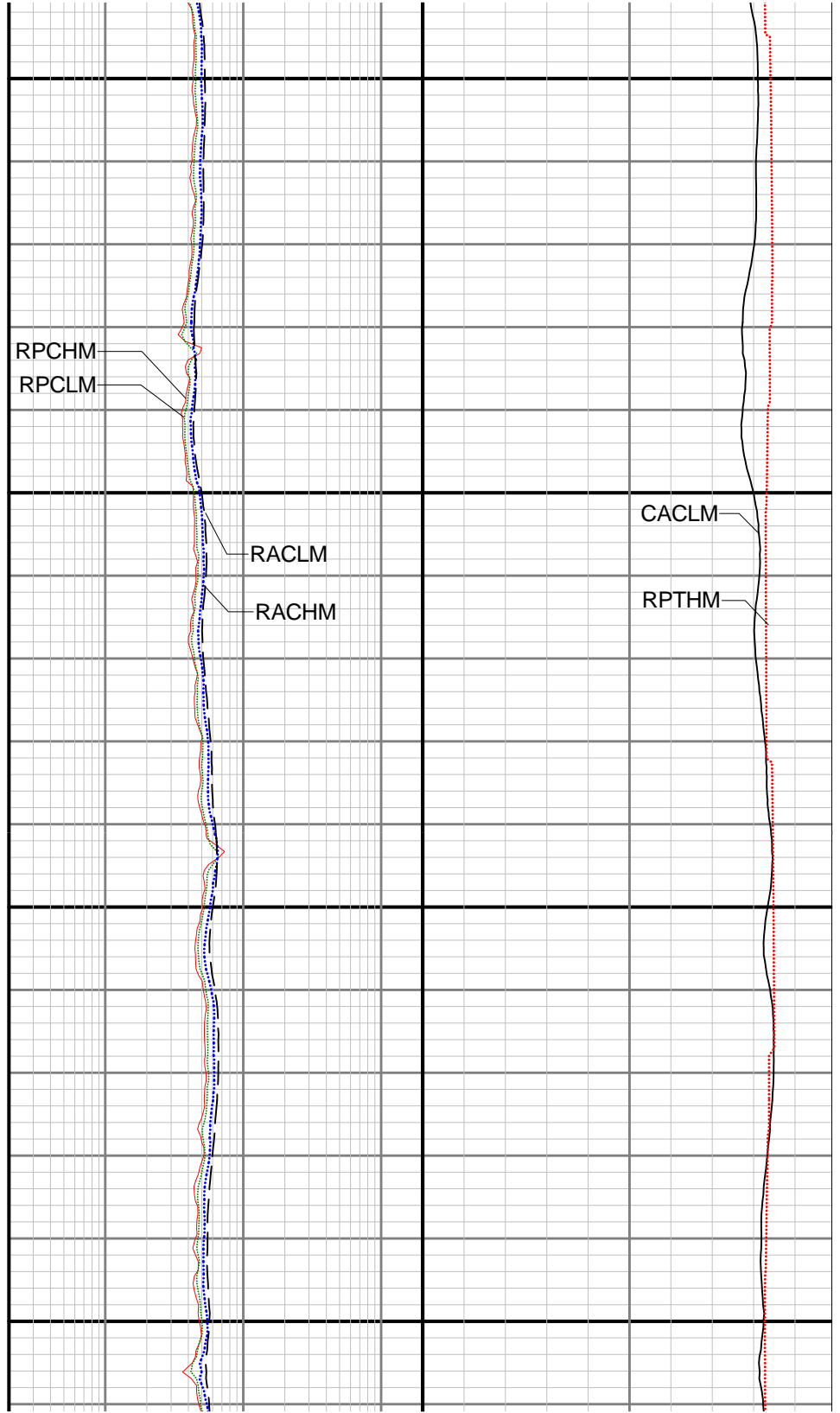
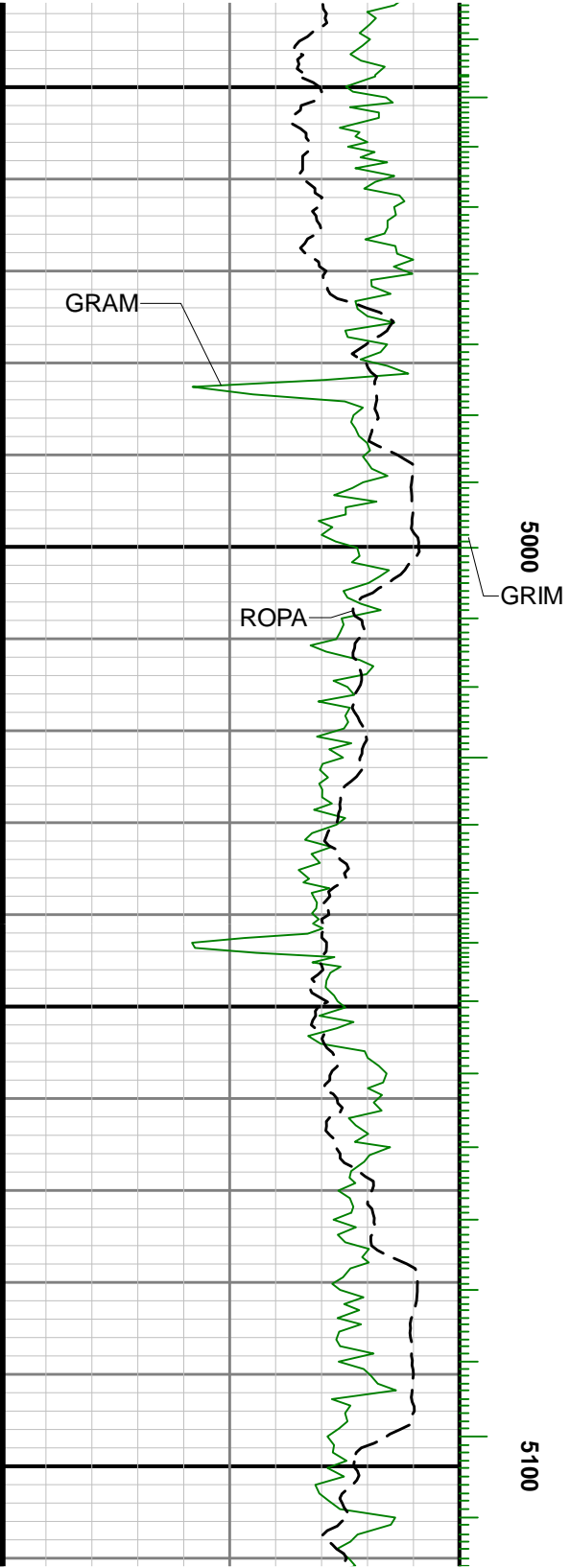


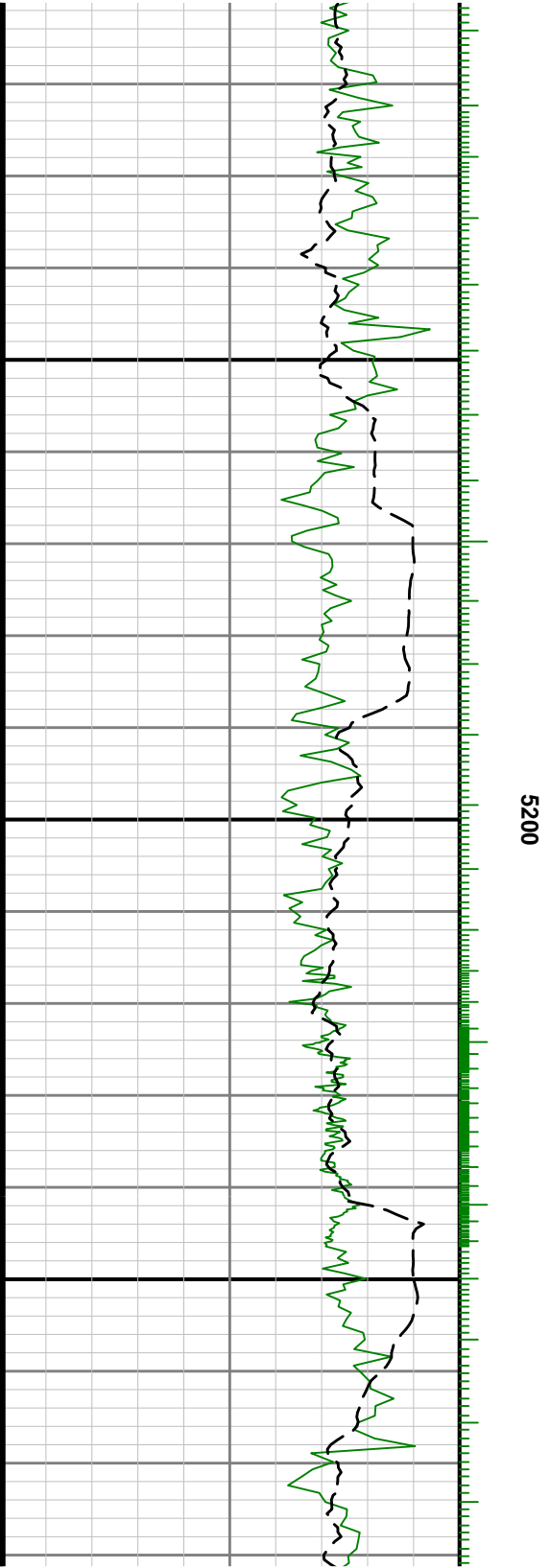
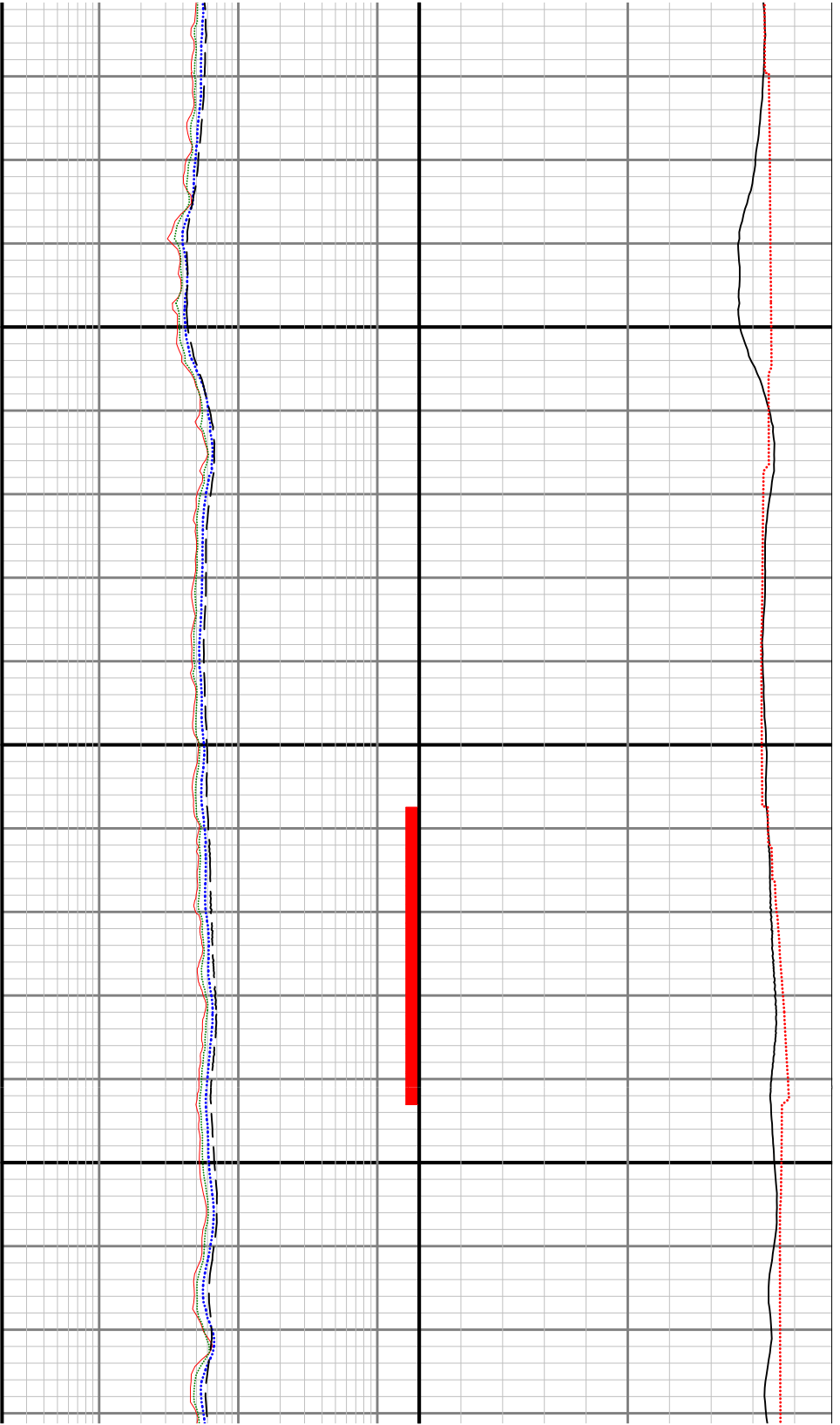


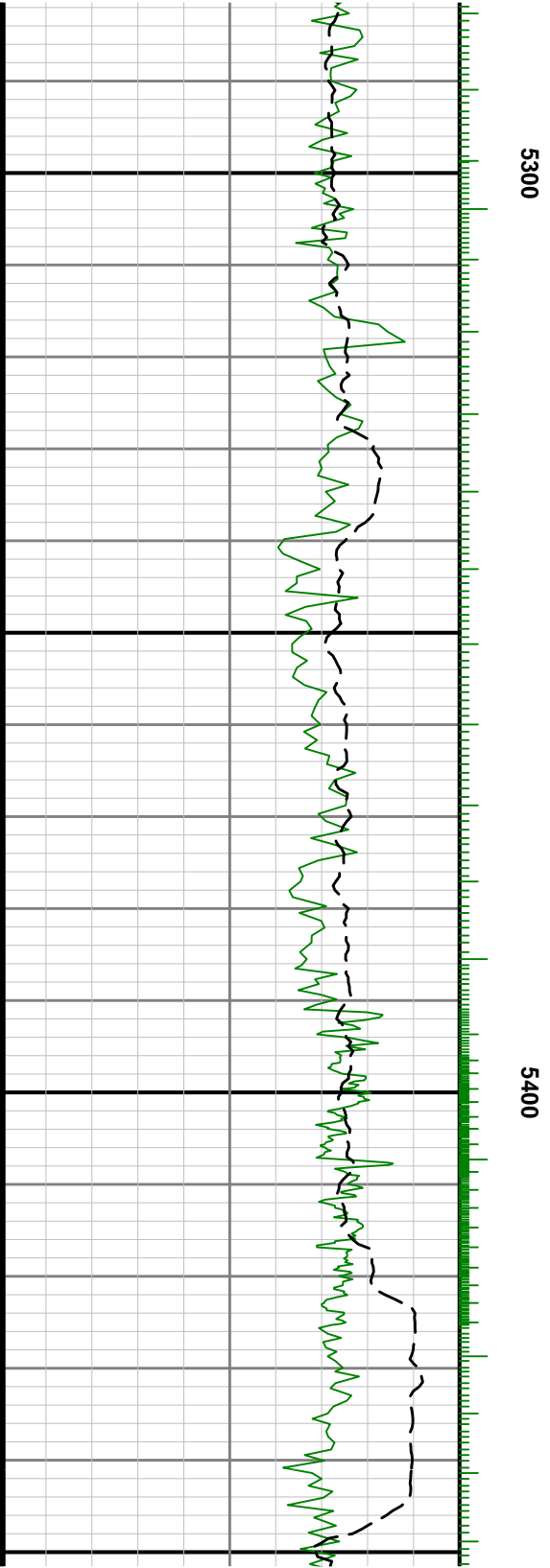
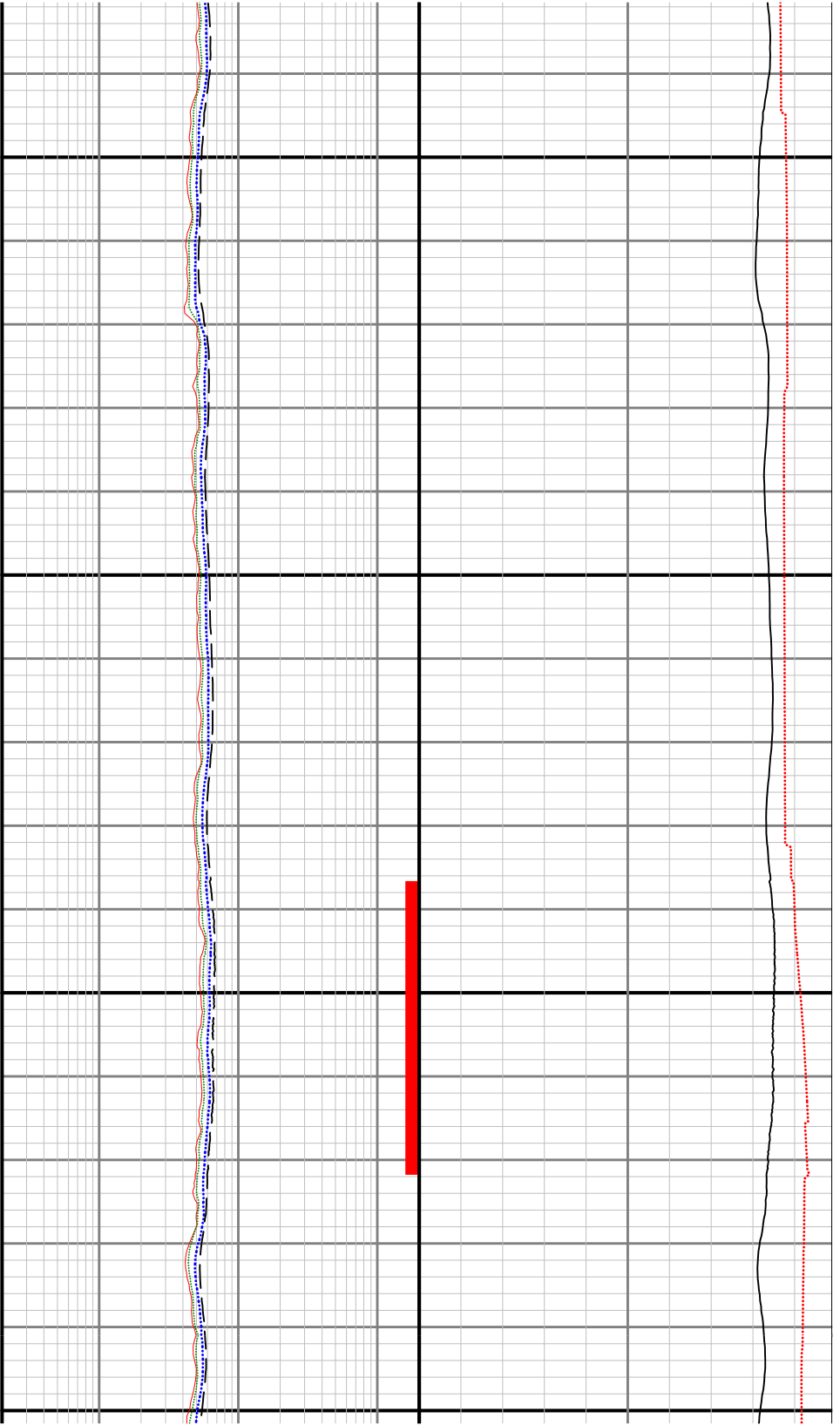


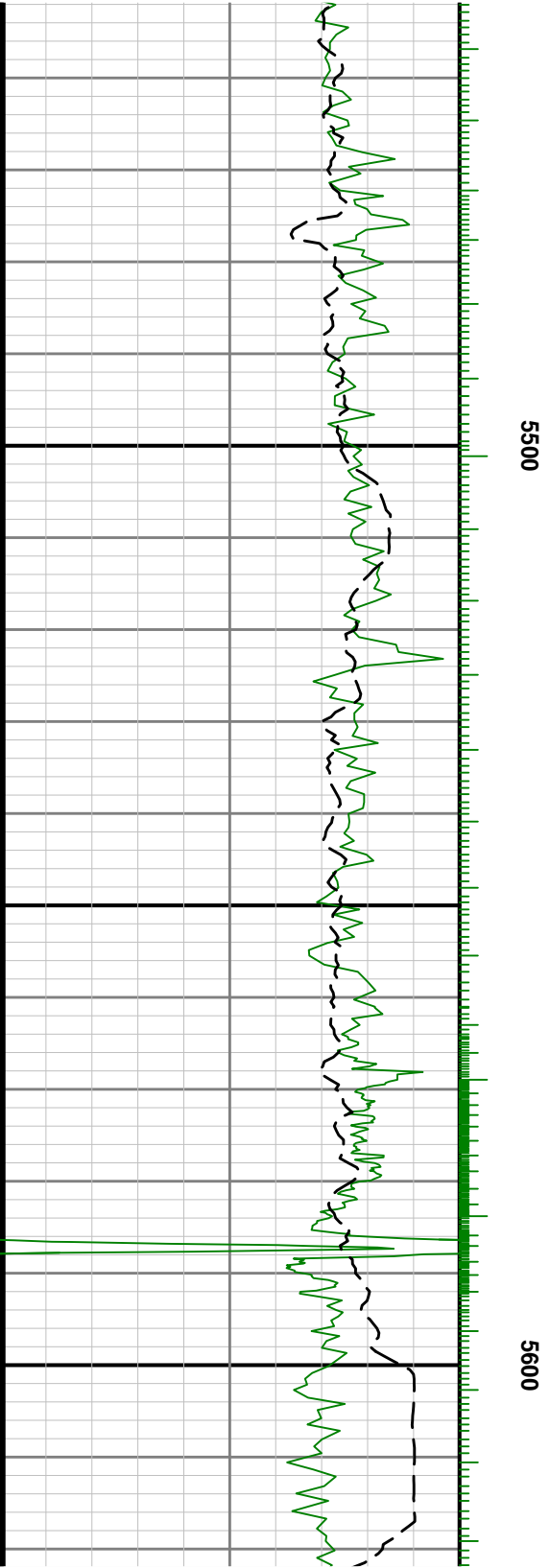


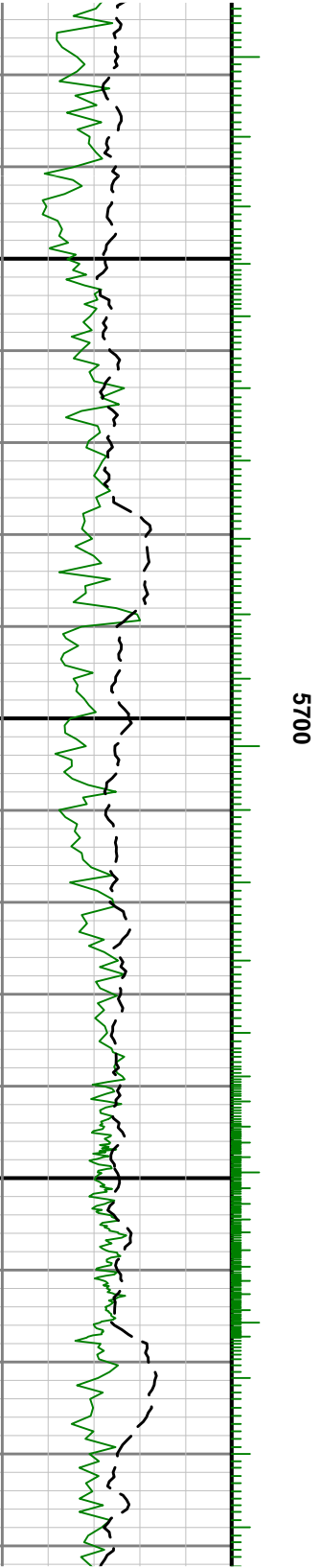
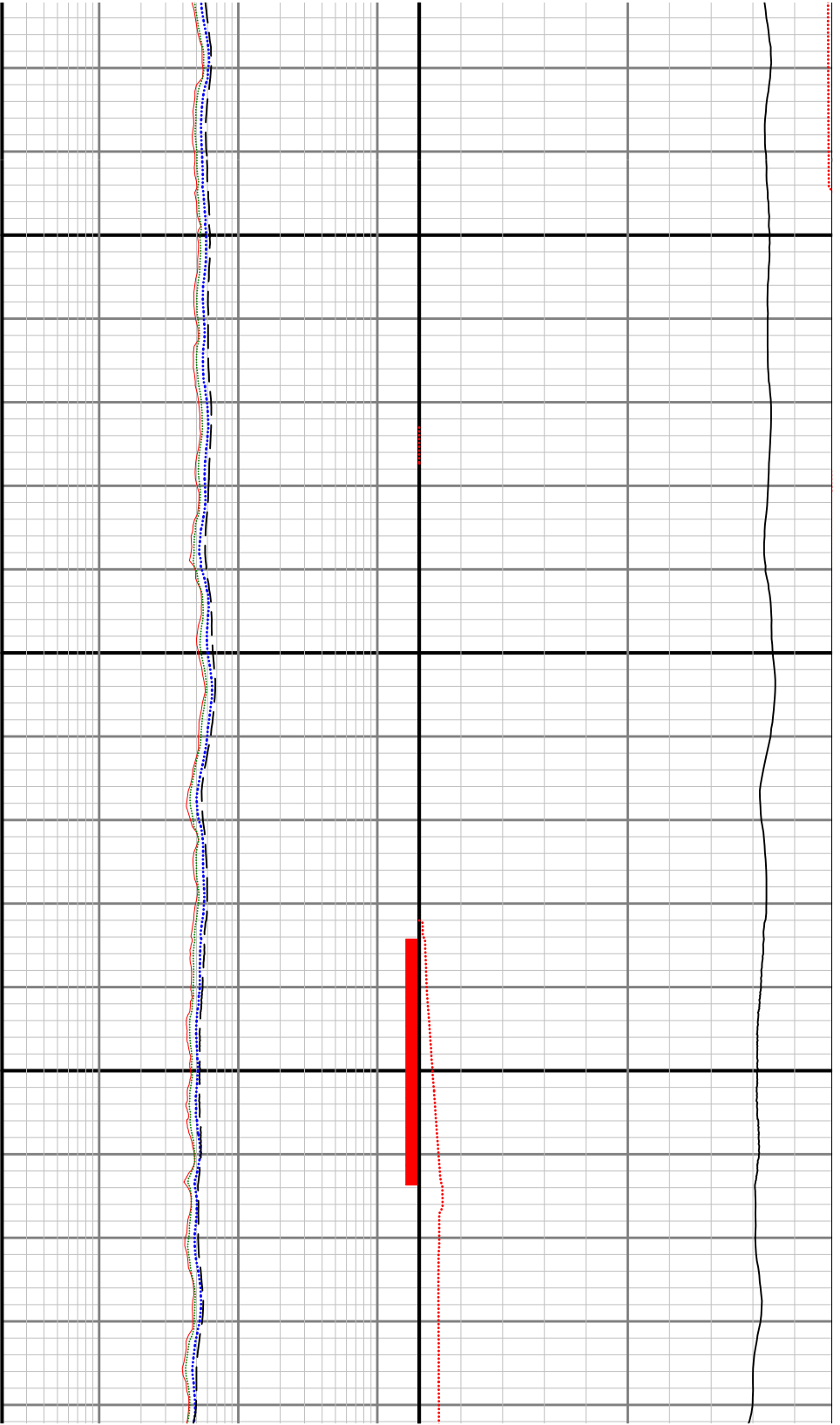


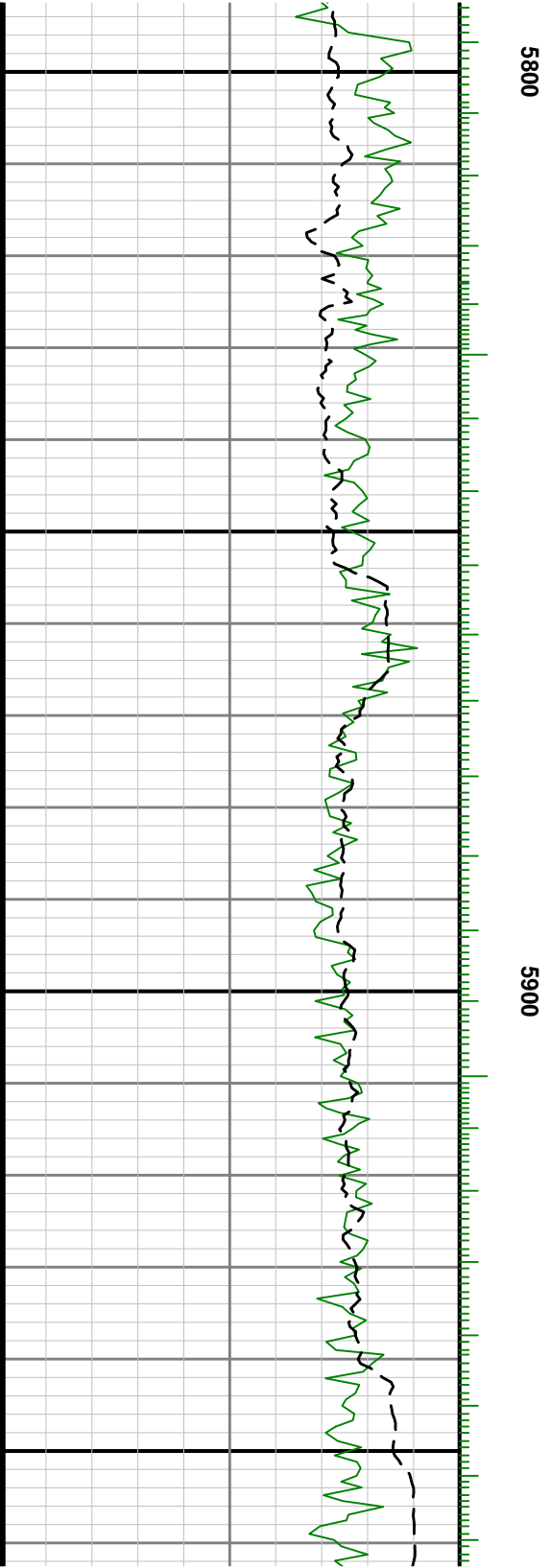


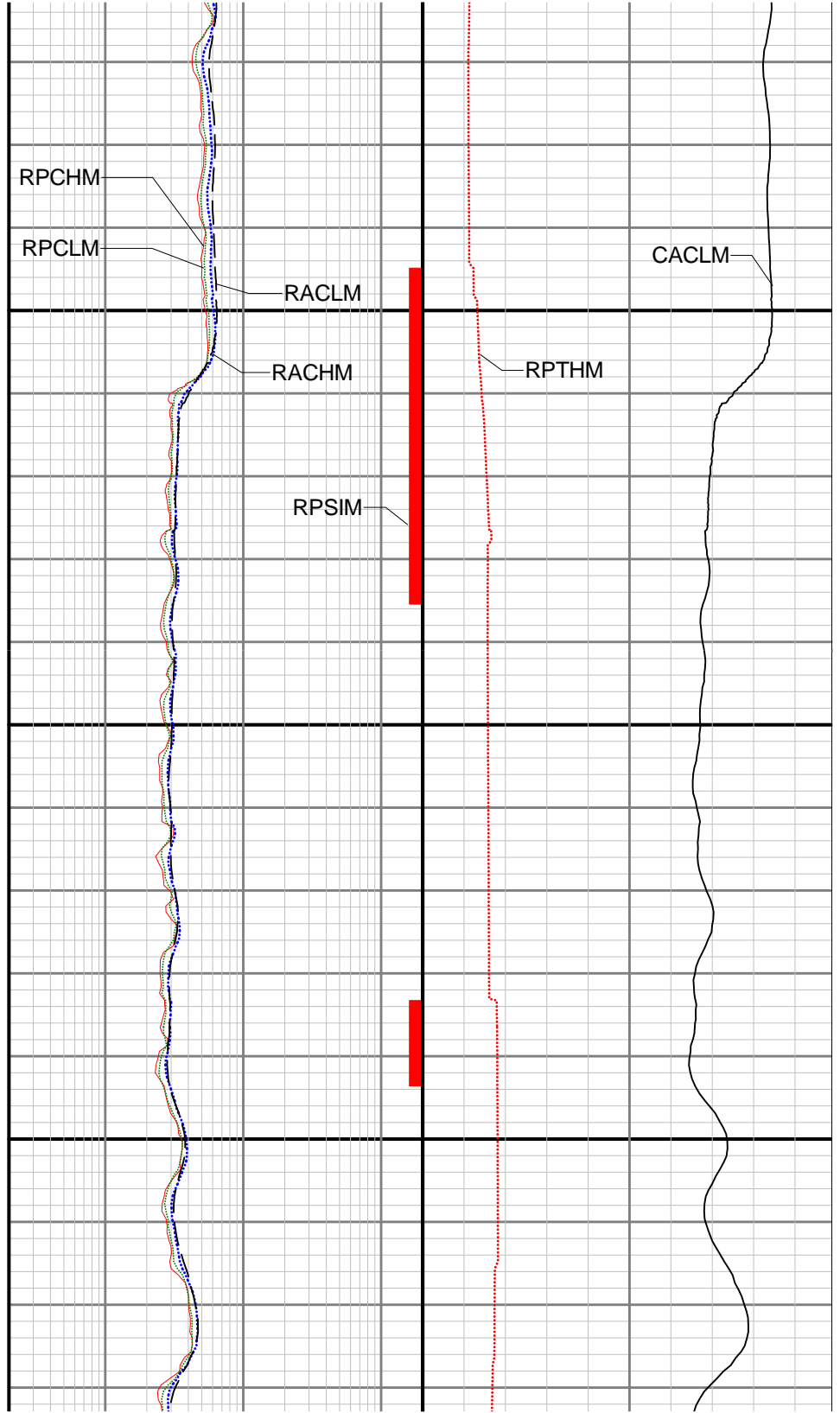
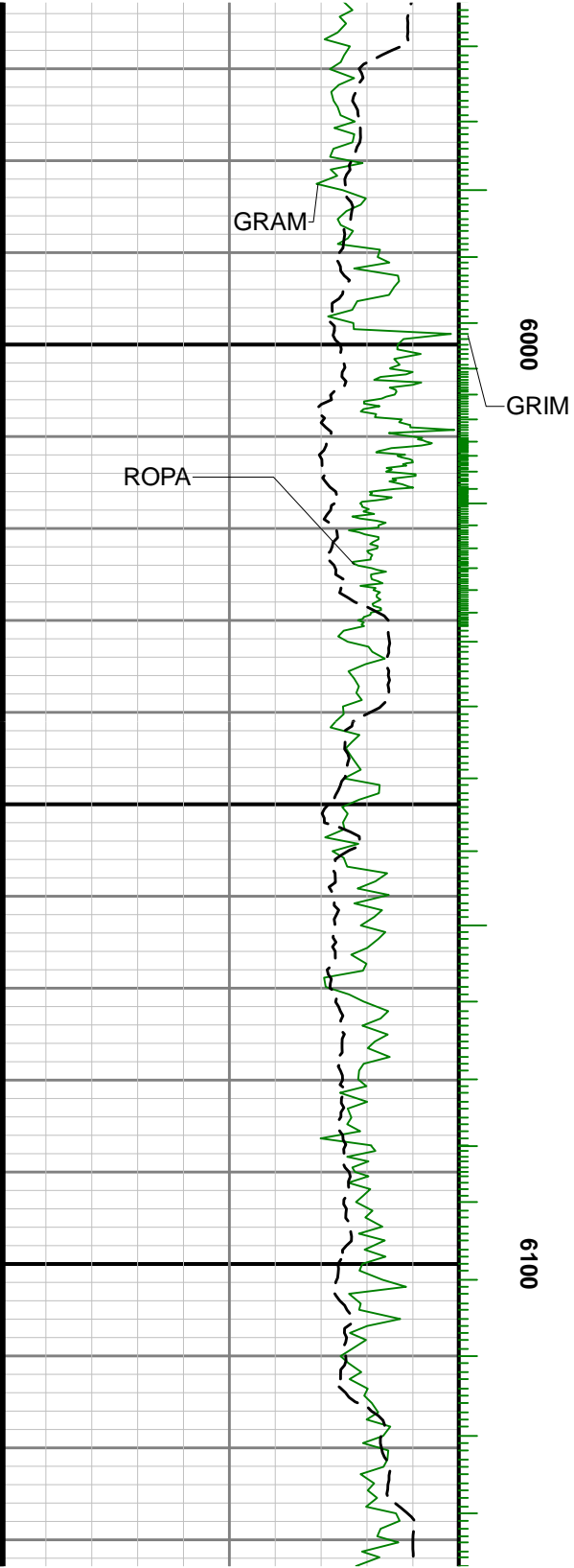


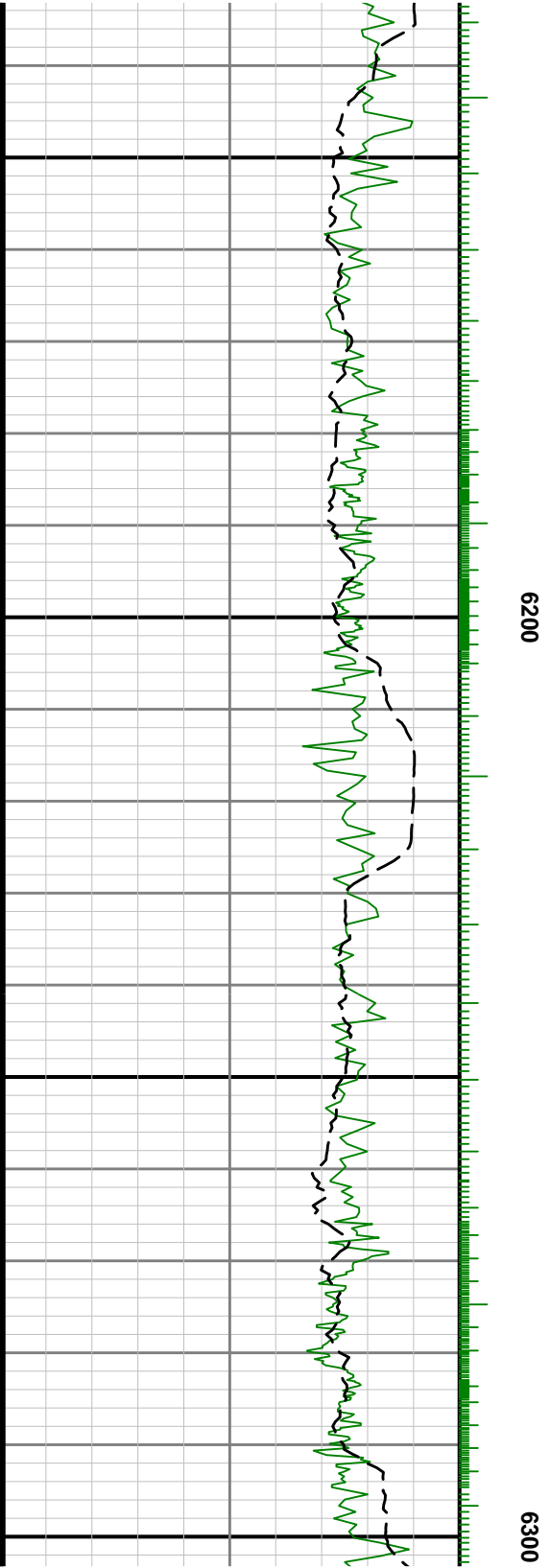
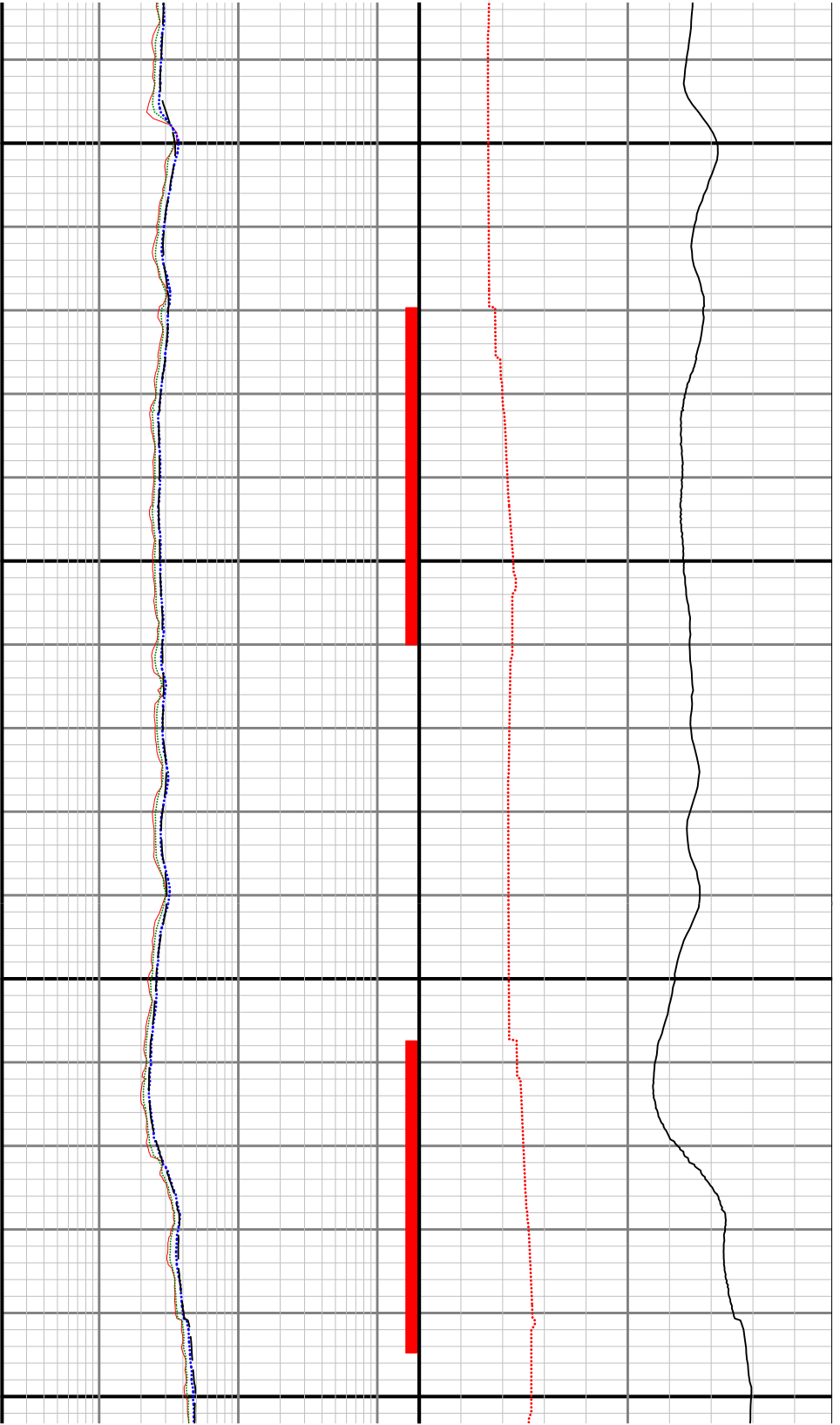


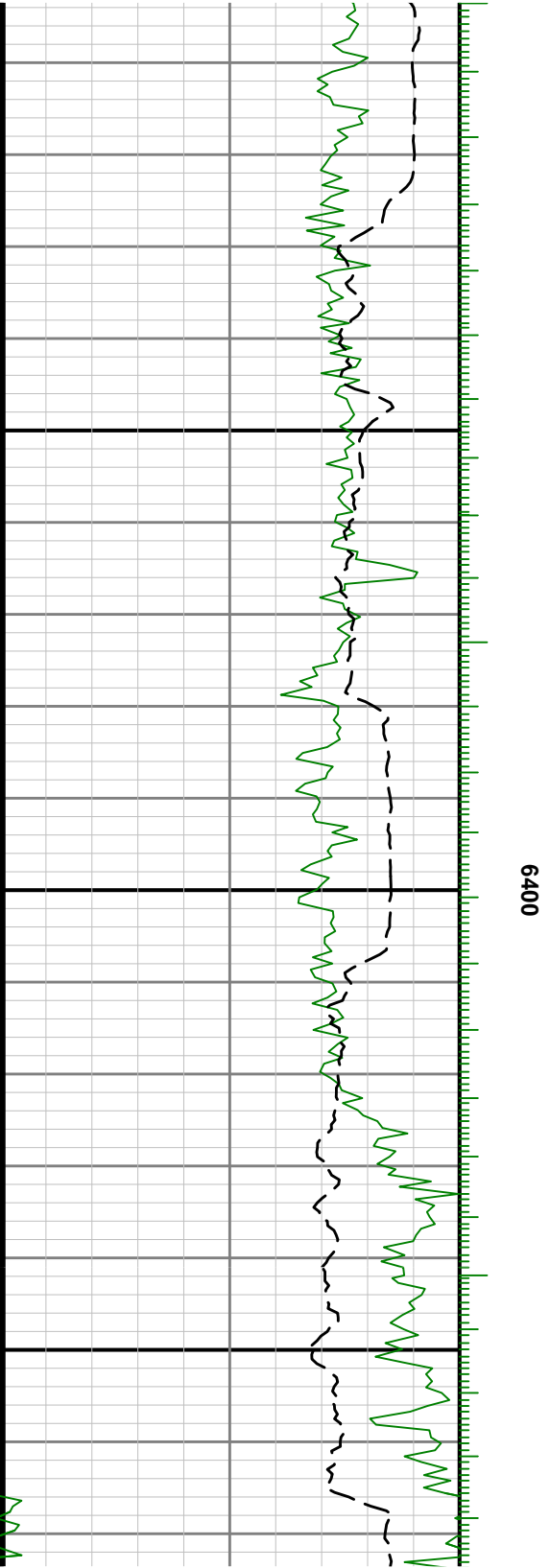
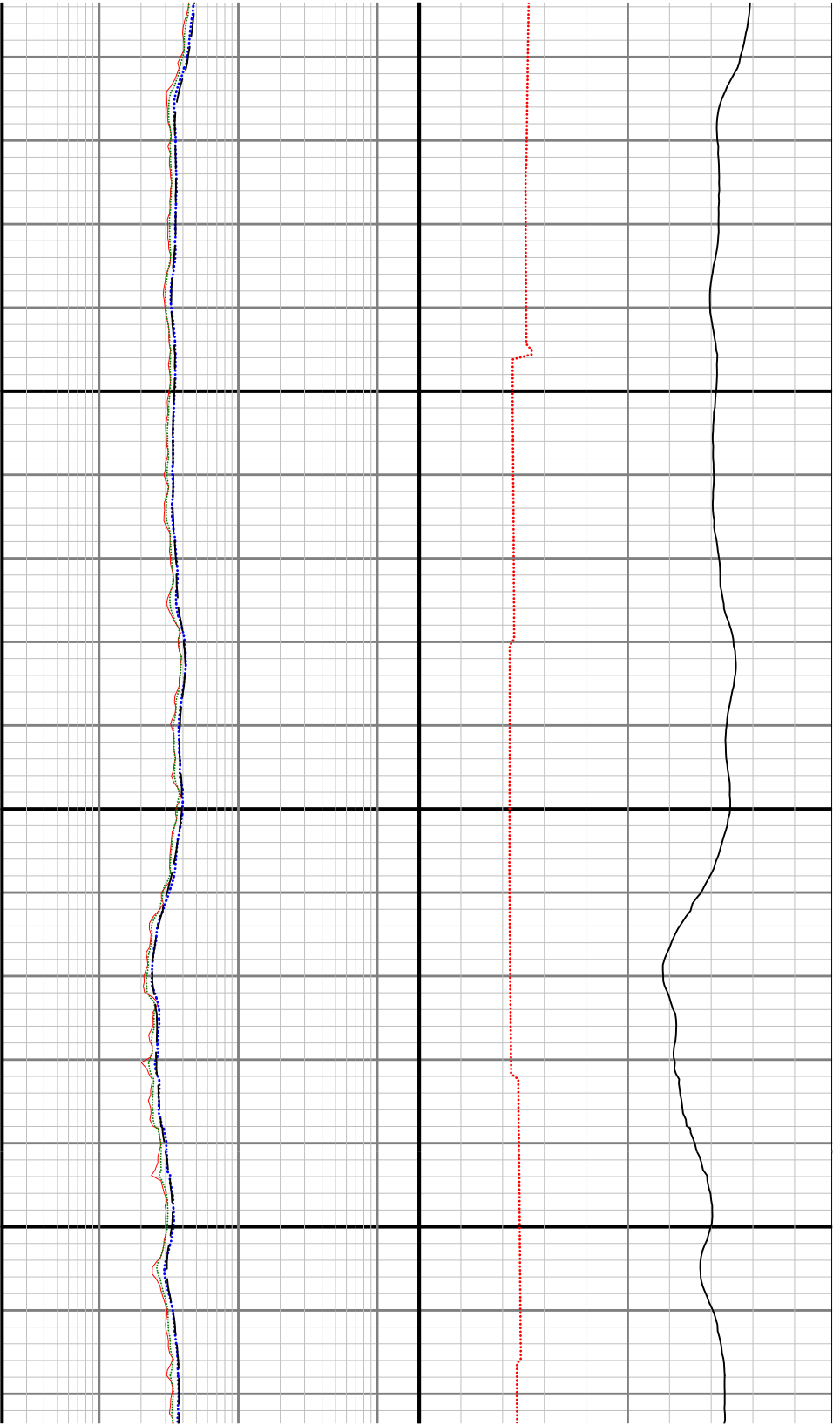


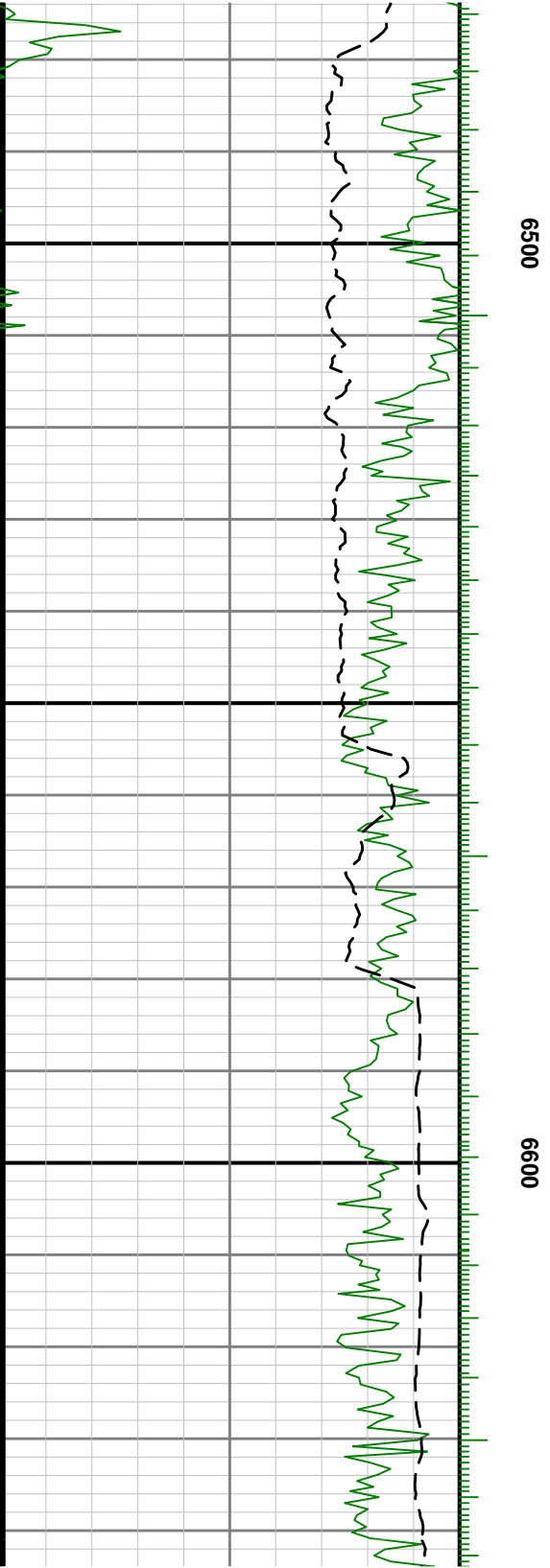
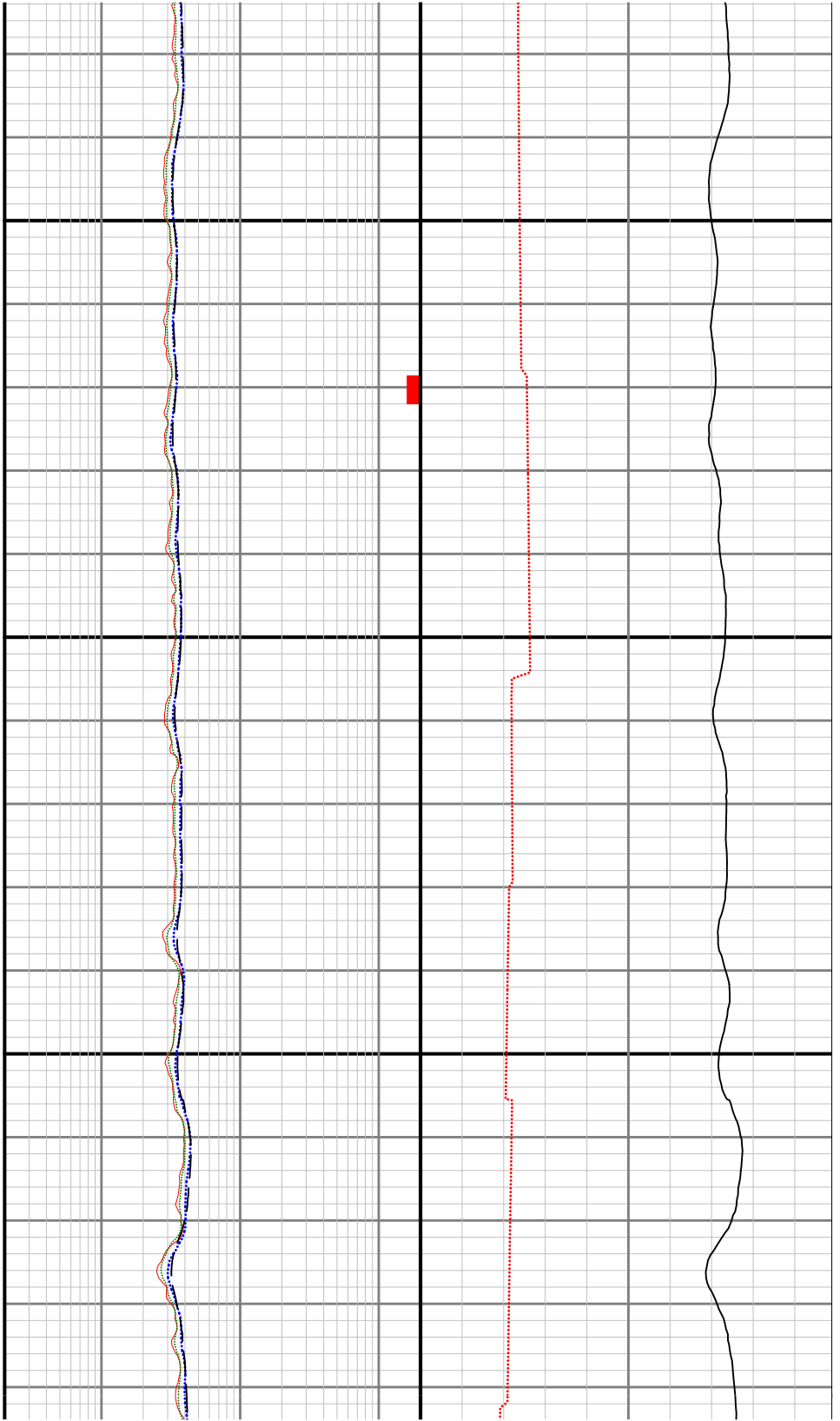


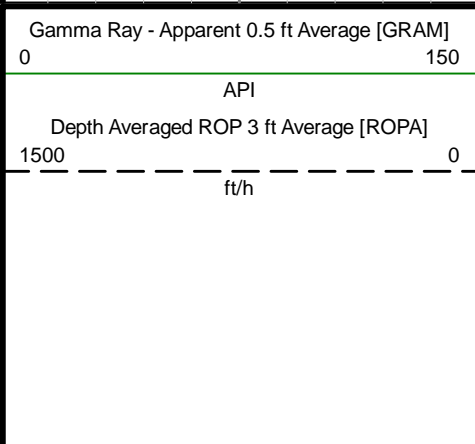
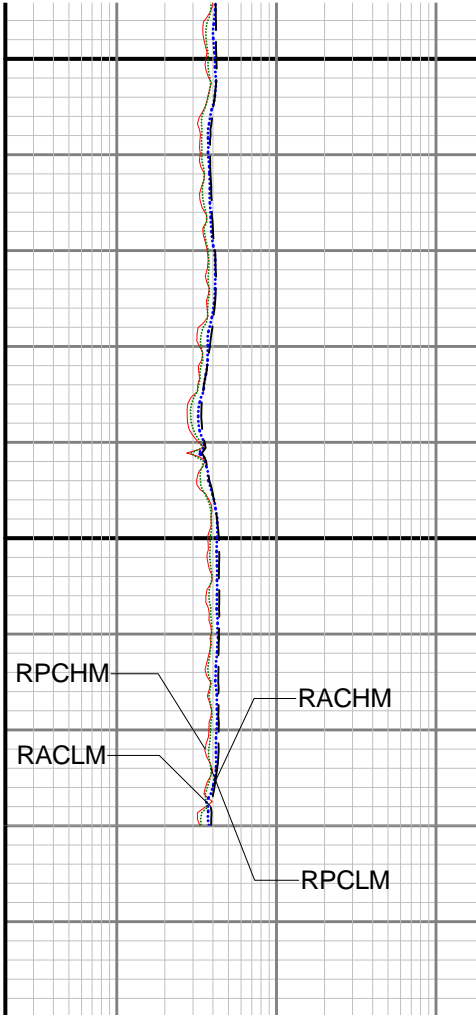
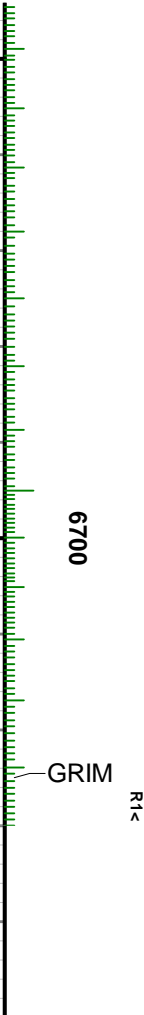
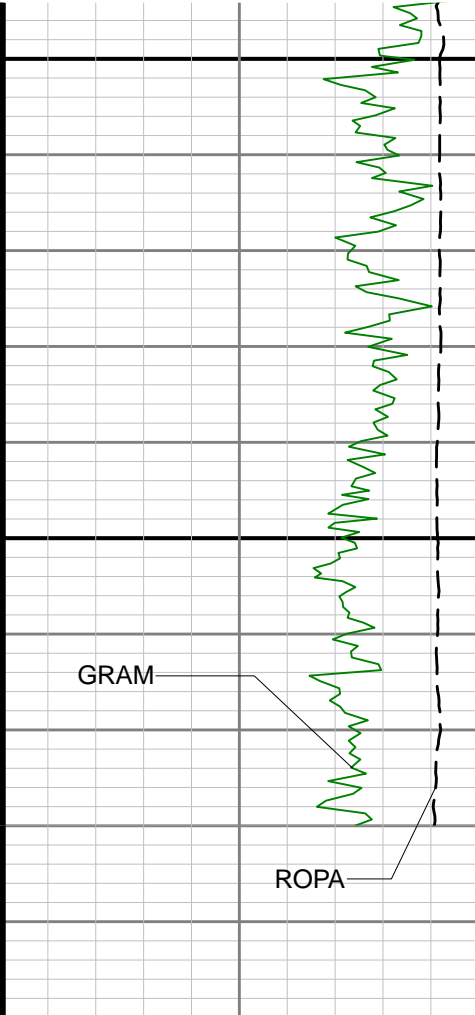












MD 1:240 feet

