



Natural Formation Evaluation
Gamma Ray

Realtime Log

Scale:

1:240

Measured Depth

Company: Kerr-McGee Oil & Gas Onshore LP

Well: Bydalek 3N-20HZ

Field: Weld County (Kerr McGee)

Region: RMD Country: United States

Surface Location:

Latitude: 40° 7' 5.743" N

Longitude: 104° 41' 35.560" W

Other Services:

Directional
VSS

Status:

Field Print

API Number:

051233621700

SEC: 20

TWN: 2N

RGE: 65W

Permanent Datum (P.D.):

Ground Level

Elevation:

4944.00 ft.

KB:

4944.00 ft.

Log Measured From:

Kelly Bushing

13.00 ft.

Above P.D.

DF:

N/A

Depth Reference:

Driller's Depth

GI:

4831.00 ft.

Interval Logged

Dates

Magnetic Field Reference

Top:

6588 ft.

Date From:

17/Apr/13

Dip Angle:

66.87°

Azi Reference

North:

True

Bottom:

11540ft.

Date To:

23/Apr/14

Total

Mag to Reference

Field Strength:

52924.0 nT

North Correction:

8.41°

Spud Date:

16/Apr/13

Field Strength:

52924.0 nT

North Correction:

8.41°

Borehole Record

Casing Record

Hole Size

From

To

Size

Weight

From

To

13,500 in.

Surface

1003 ft.

9,600 in.

36.00 lb/ft

Surface

1001 ft.

8,750 in.

1003 ft.

7576 ft.

7,000 in.

26.00 lb/ft

Surface

7557 ft.

6,125 in.

7576 ft.

11597 ft.

Mud Record

Deviation Record

Type

From

To

Hole Size

Interval

Inc / Az (Start)

Inc / Az (End)

Water Based - Fresh

3937 ft.

11264 ft.

13,500 in.

1003 ft.

0.4° / 148.1°

0.3° / 295.1°

8,750 in.

7473 ft.

0.1° / 295.1°

85.2° / 356.7°

6,125 in.

4124 ft.

85.2° / 356.3°

89.0° / 0.7°

Acquisition System Software Version

Other

Advantage

2.20U4

Rig: / Contractor:

Ensign 138

/ Ensign Drilling

PATS

6.4.1.34

Job No:

5257266

/ District: / Unit:

RMD

/ D&E

INTEQ does not guarantee the accuracy or correctness of interpretations provided in or from this log. Since all interpretations are opinions based on measurements, INTEQ shall under no circumstances be responsible for consequential damages or any other loss, costs, damages or expenses incurred or sustained in connection with the use of any such interpretations. INTEQ disclaims all expressed and implied warranties related to this service. INTEQ's liabilities and obligations shall be governed by INTEQ's Standard Terms and Conditions.

Log Run Summary

LWD Run No.	BHA Run No.	Bit Run No.	Bit Size (in.)	Bit Type	Bit Gauge Length (in.)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Time (hrs.)
							Top (ft.)	Bottom (ft.)	From (ft.)	To (ft.)	Start	End	
1	4	2	8.750	PDC	2.500	Steerable	N/A	N/A	986	6648	17/Apr/2013 00:30	18/Apr/2013 14:45	22.65
2	4	3	8.750	PDC	2.500	Steerable	6588	7216	6639	7266	18/Apr/2013 21:33	19/Apr/2013 15:37	35.26
3	4	3	8.750	PDC	2.500	Steerable	7217	7529	7268	7579	20/Apr/2013 01:06	20/Apr/2013 11:54	45.57
4	4	4	6.125	PDC	2.500	Steerable	7529	11540	7572	11597	22/Apr/2013 02:22	23/Apr/2013 10:29	30.78

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Robert Bartlett	Apr 16 2013	Apr 24 2013	David Campbell	Apr 16 2013	Apr 24 2013	Will Drake	Apr 16 2013	Apr 21 2013

Robert Lea	Apr 16 2013	Apr 24 2013	Bill Herbers	Apr 20 2013	Apr 24 2013							

Mud Properties Record

Date / Time		LWD Run No.	Measured Depth (ft.)	Mud Type	Density (ppg)	Viscosity (cp)	pH	Fluid Loss (cc)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
17/Apr/2013	15:55	1	3937	Water Based – Fresh	8.5	29	8.8	40.0	0 / 98	Active Mud Pit	0	0.0
18/Apr/2013	05:26	1	6283	Water Based – Fresh	8.4	29	9.5	40.0	0 / 99	Active Mud Pit	0	0.0
18/Apr/2013	23:36	2	6711	Water Based – Fresh	9.8	35	9.0	11.0	0 / 92	Active Mud Pit	0	0.0
20/Apr/2013	00:39	3	7266	Water Based – Fresh	9.8	37	9.0	7.0	0 / 92	Active Mud Pit	0	0.0
22/Apr/2013	00:59	4	7576	Water Based – Fresh	9.8	37	8.9	7.0	0 / 92	Active Mud Pit	0	0.0
22/Apr/2013	23:20	4	10126	Water Based – Fresh	9.3	37	9.3	10.0	0 / 94	Active Mud Pit	0	0.0

Mnemonics

Curve	Description	Units
GRAX	Gamma Ray Apparent, 0.5 ft. Avg.	API
GRIX	Gamma Ray Data Density	point
GRSI	Gamma Ray Sliding Indicator	unitless
GRTX	Gamma Ray Time Since Drilled	min
ROPA	Rate of Penetration, 3.0 ft. Avg.	ft/hr
TCDX	Downhole Temperature	degF
TVD	True Vertical Depth	ft
WOBA	Surface Weight on Bit, 1.0 ft. Avg.	klbs

Equipment and Service Data

LWD Run No.	Tool	Serial Number	Measurement	Bit Offset (ft)	Max O.D. (in.)	Min I.D. (in.)
1	DIR	11906077	Directional	59.22	6.750	0.000
1	SRIG	12521741	Gamma	55.84	6.750	0.000
2	DIR	11906077	Directional	52.92	6.750	0.000
2	SRIG	12521741	Gamma	49.55	6.750	0.000
3	DIR	11906077	Directional	53.19	6.750	0.000
3	SRIG	12521741	Gamma	49.81	6.750	0.000
4	DIR	11677608	Directional	59.83	4.750	0.000
4	SRIG	10392040	Gamma	56.54	4.750	0.000

Service and Tool Mnemonics

Mnemonic	Name	Description
DIR	Directional	Wellbore directional survey
SRIG	Inclination and Gamma	Probe based gamma ray and inclination module

Comments

1.) Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to the lack of control by Baker Hughes logging services, depth calibrations and measurements could not be independently verified.

engineers, depth calibrations and measurements could not be independently verified.

2.) Baker Hughes runs 1 utilized 6 3/4 inch NaviTrak services (Directional only) behind an 8 3/4 inch bit and steerable assembly from 1003 to 6639 feet MD (985 to 6555 feet TVD).

3.) Baker Hughes runs 2 & 3 utilized 6 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 8 3/4 inch bit and steerable assembly from 6639 to 7576 feet MD (6555 to 7156 feet TVD).

4.) Baker Hughes run 4 utilized 4 3/4 inch NaviGamma services (Gamma Ray and Directional) behind an 6.125 inch bit and steerable assembly from 7576 to 11597 feet MD (7156 to 7158 feet TVD).

5.) The interval from 1003 to 6639 feet MD (985 to 6555 feet TVD) was not logged due to directional only services being provided through the straight-hole and nudge section for Baker Hughes run 1.

Remarks

Number	Measured Depth (ft)	Hole Section (in.)	LWD Run No.	Remark
1	6588	8.750	2	Begin logging due to directional only service being provided thru vertical section
2	7216	8.750	3	The interval from 7216 to 7266 feet MD was logged up to 15 hours after being drilled due to a trip out of the hole to pick up new motor and bit.
3	11540	6.125	4	No sensor date logged from 11540 to 11597 feet MD due to sensor to bit offset.



Company : Kerr-McGee Oil & Gas Onshore LP

Well : Bydalek 3N-20HZ

Interval : 6550.00 - 11650.00 feet

Created : 4/23/2013 10:41:14 AM

Gamma Ray Apparent 0.5 ft Avg [GRAX]

0 150

API

True Vertical Depth [TVD]

7800 6000

ft

MD feet 1:240

Rate of Penetration 3.0 ft Avg [ROPA]

1000 0

ft/hr

Gamma Time Since Drilled [GRTX]

0 600

min

Downhole Temperature [TCDX]

100 350

degF

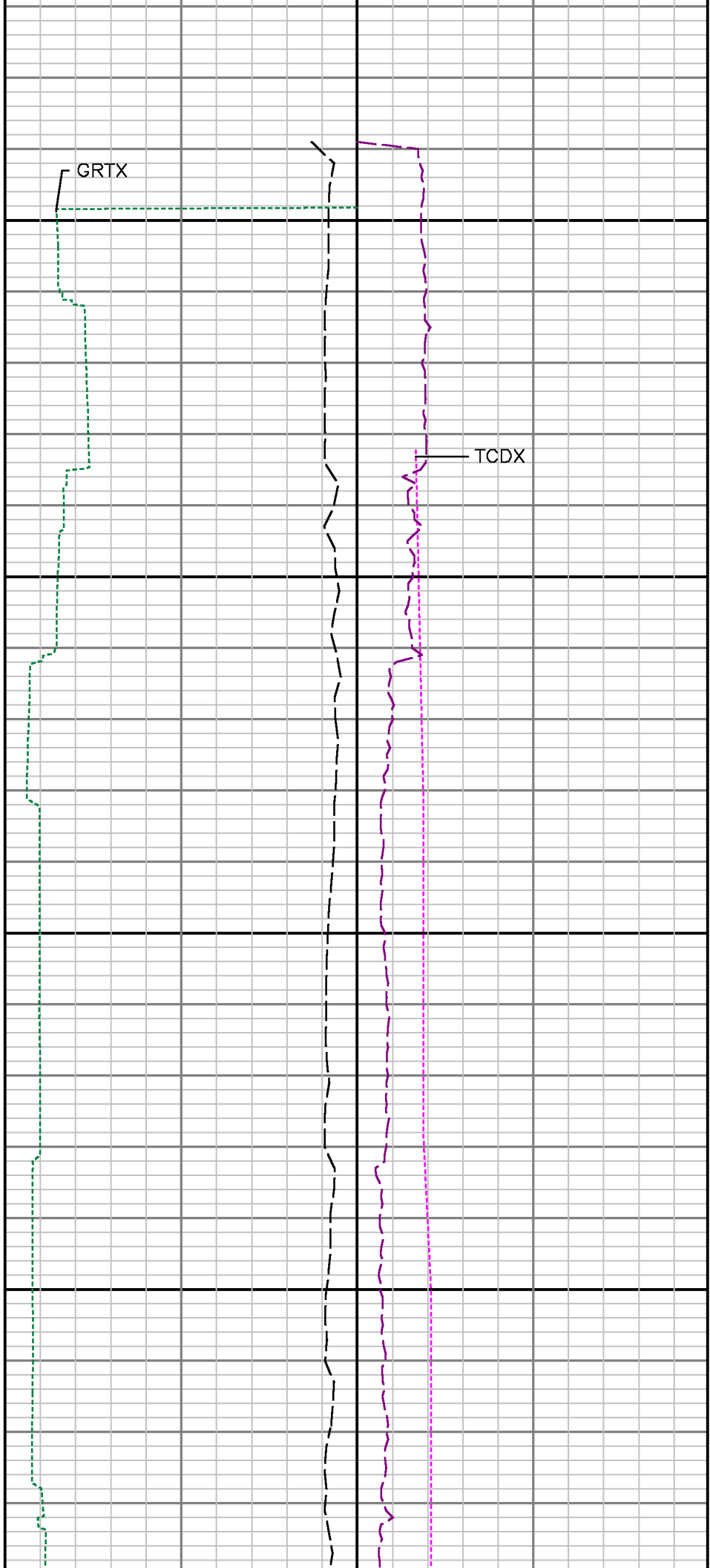
Surface Weight On Bit 1.0 ft Avg [WOBA]

0 100

klbf

See Remark 1

6600

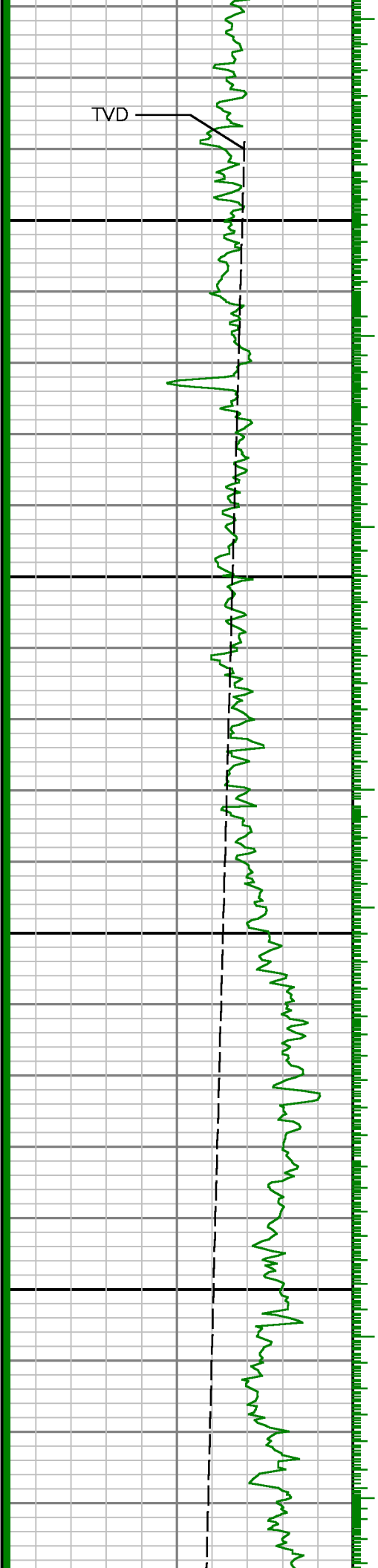


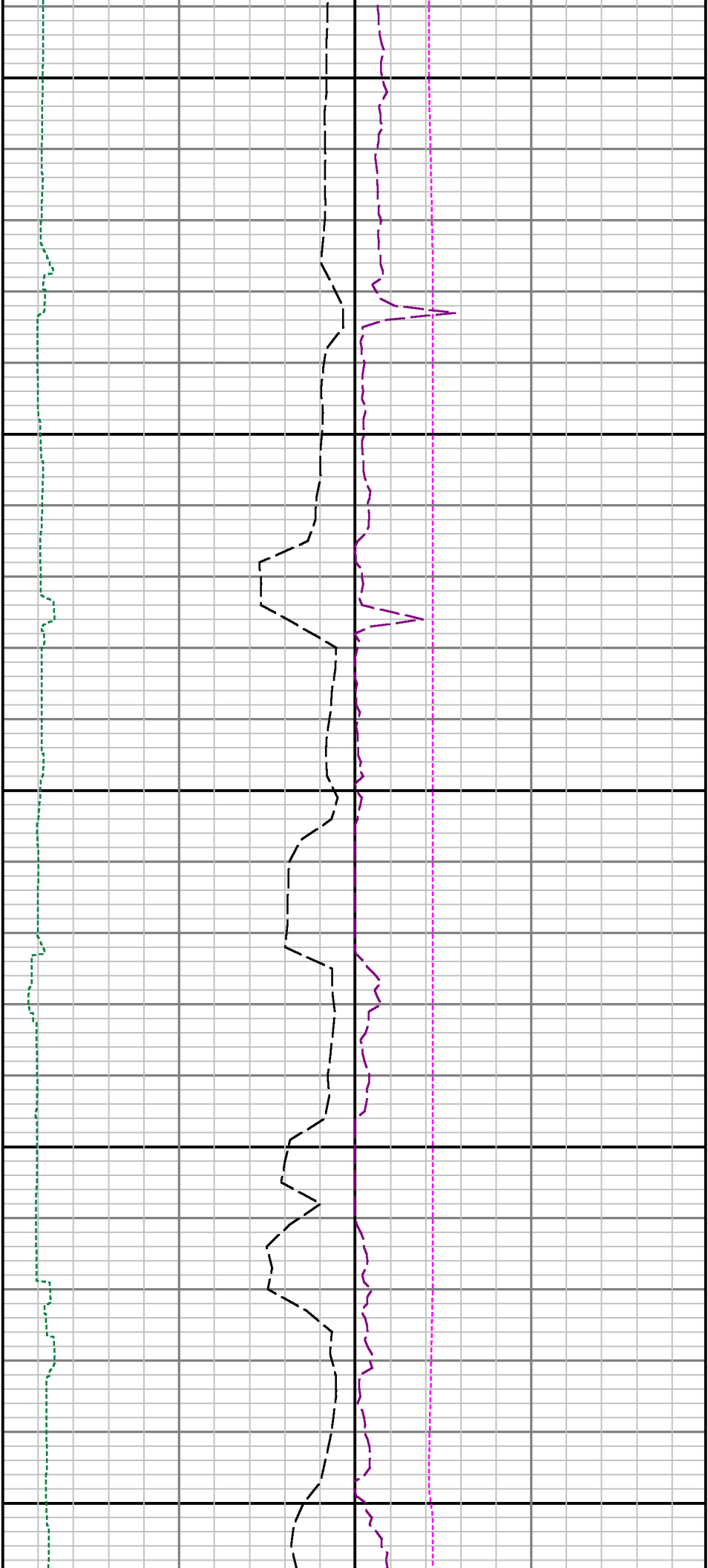
6800

6700

> Run 2

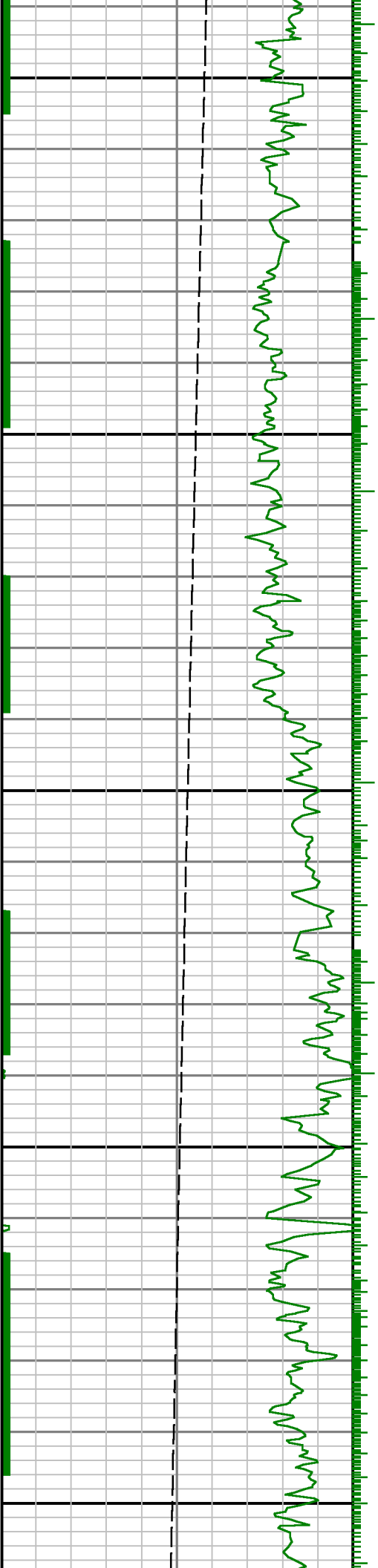
TVD

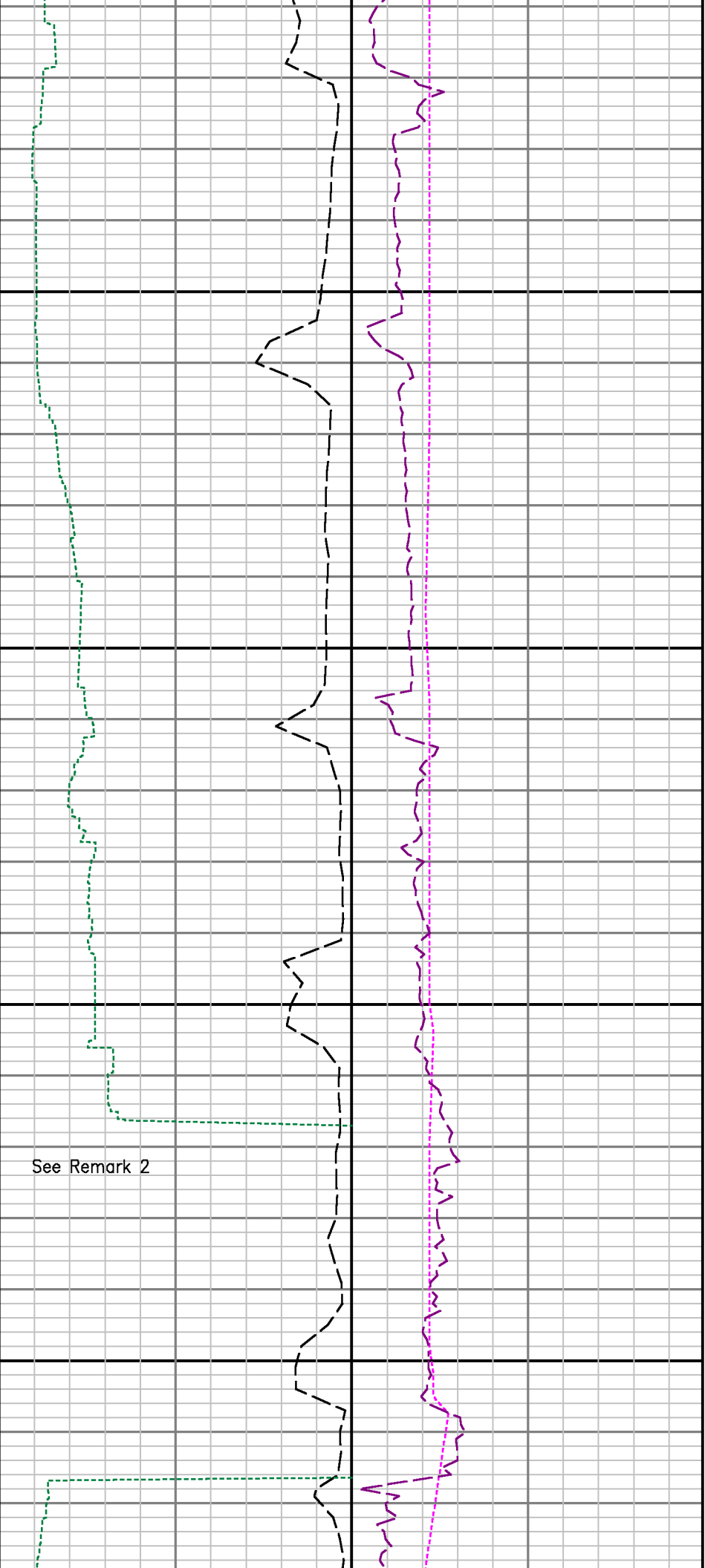




6900

7000

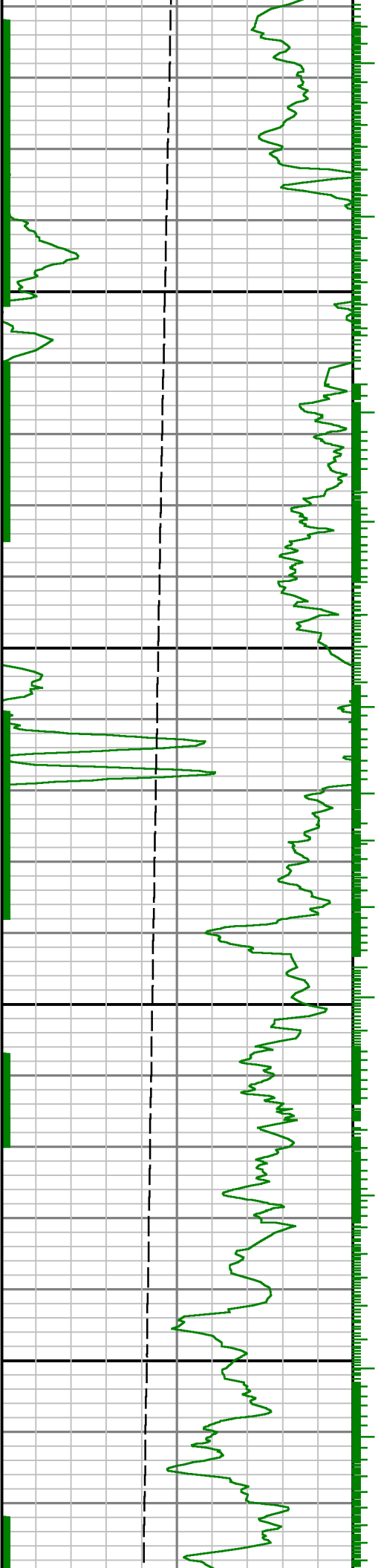


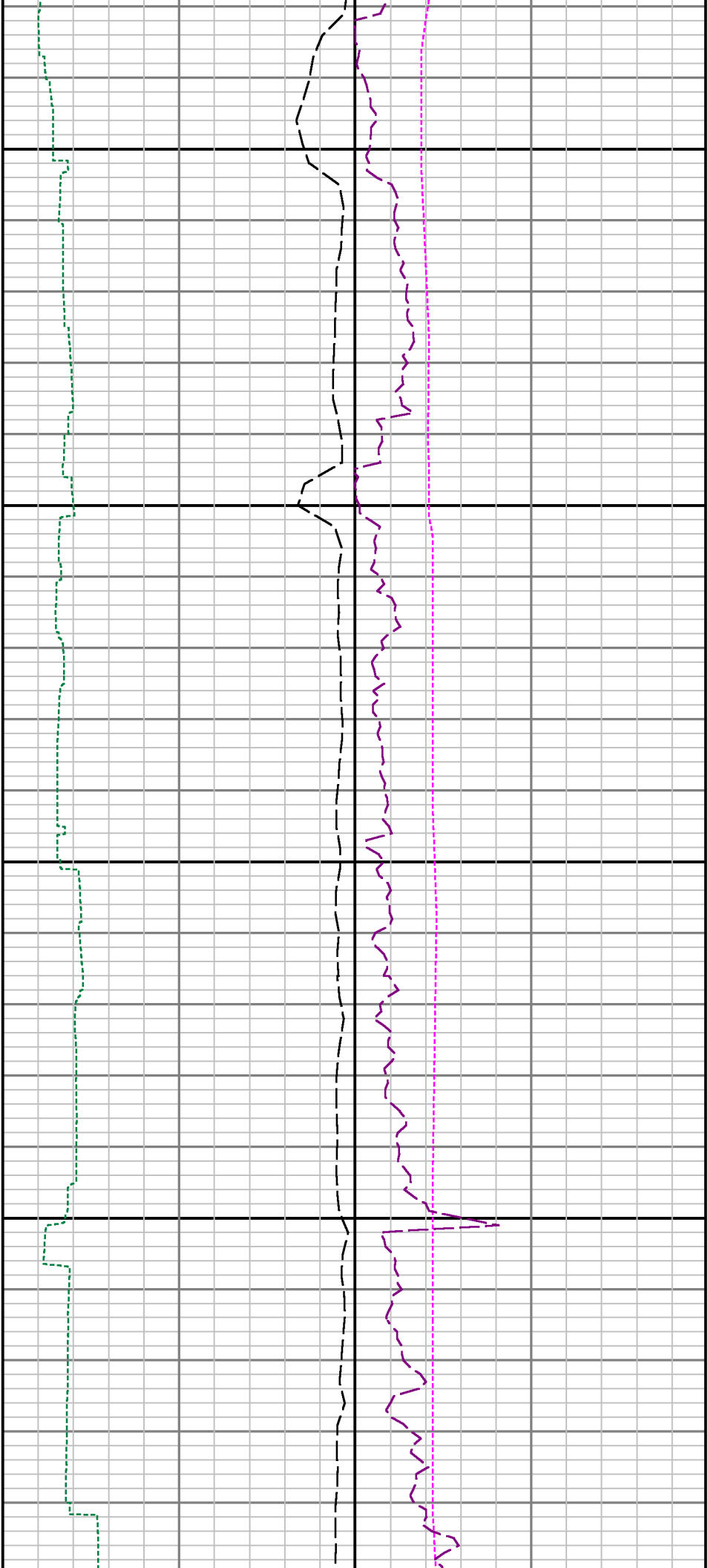


7100

7200

Run 2 ◇ Run 3

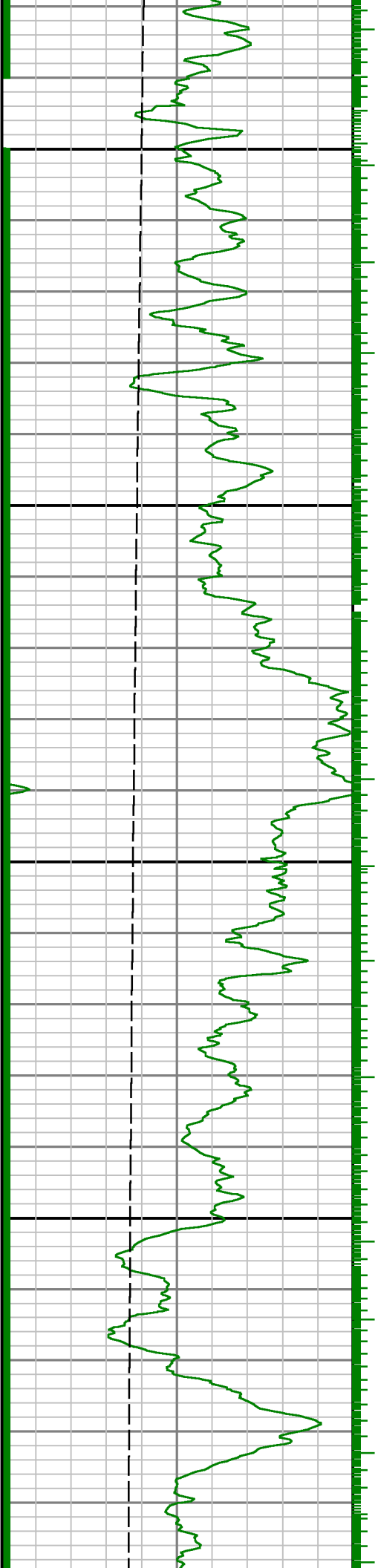


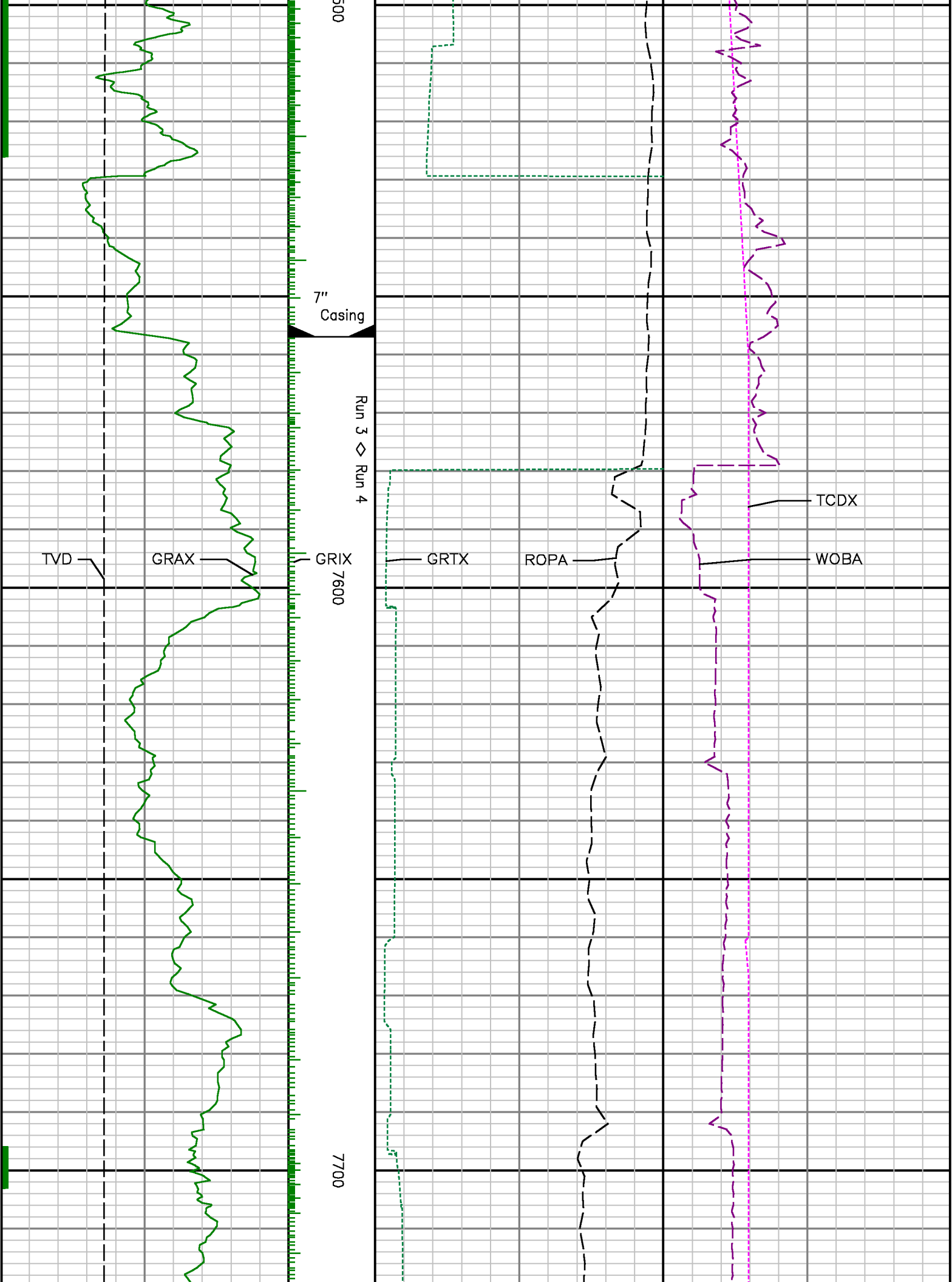


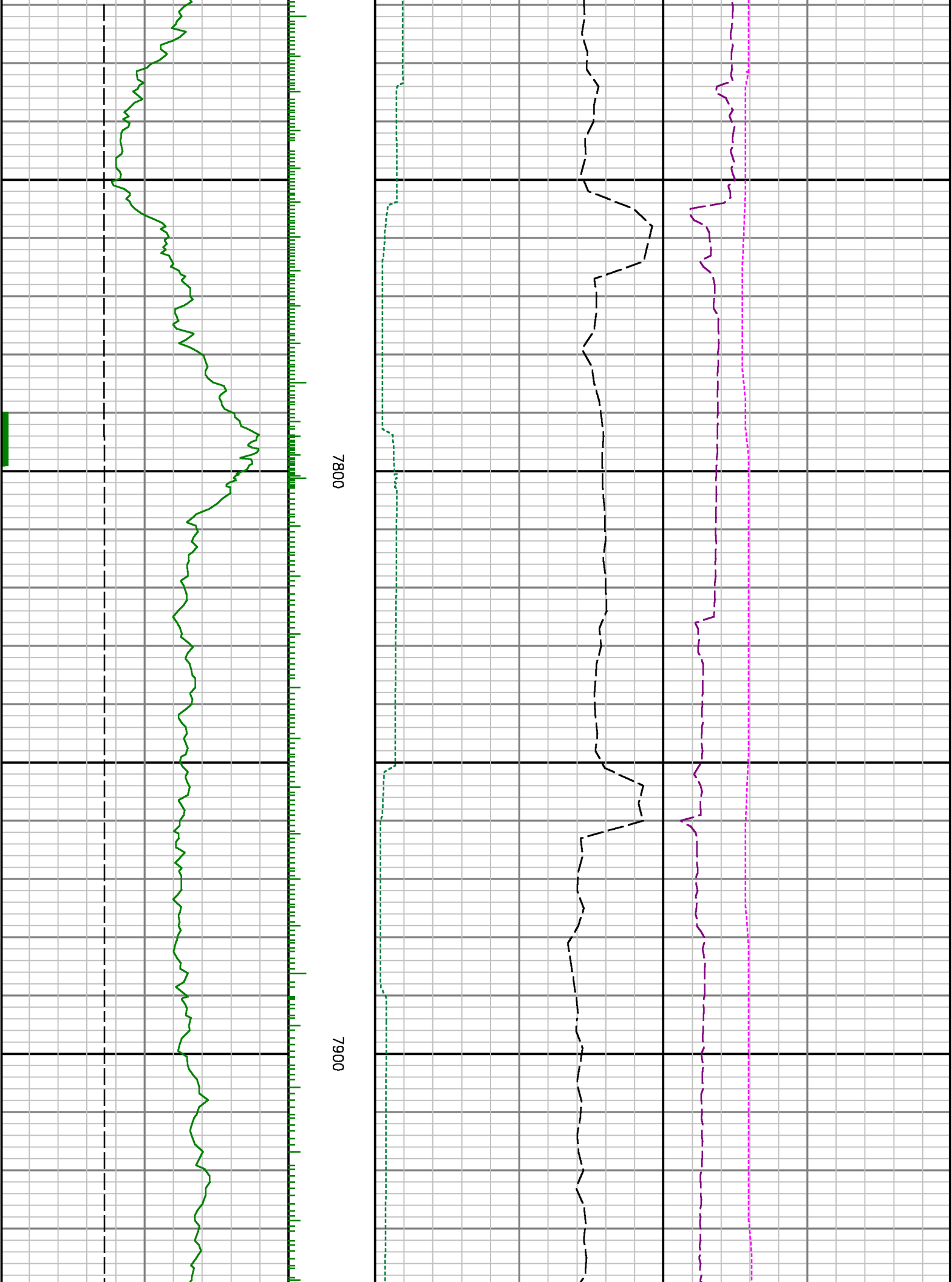
7300

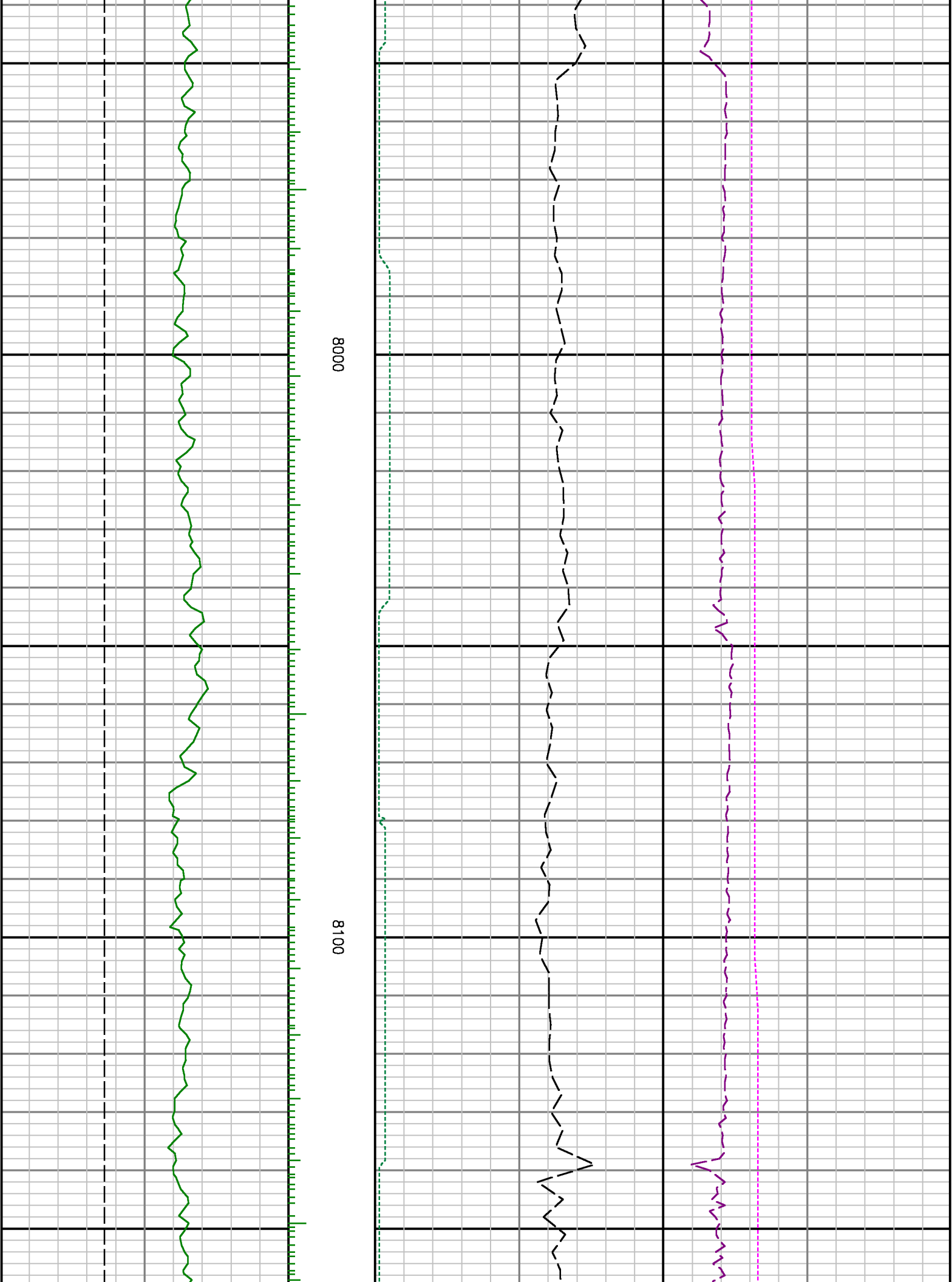
7400

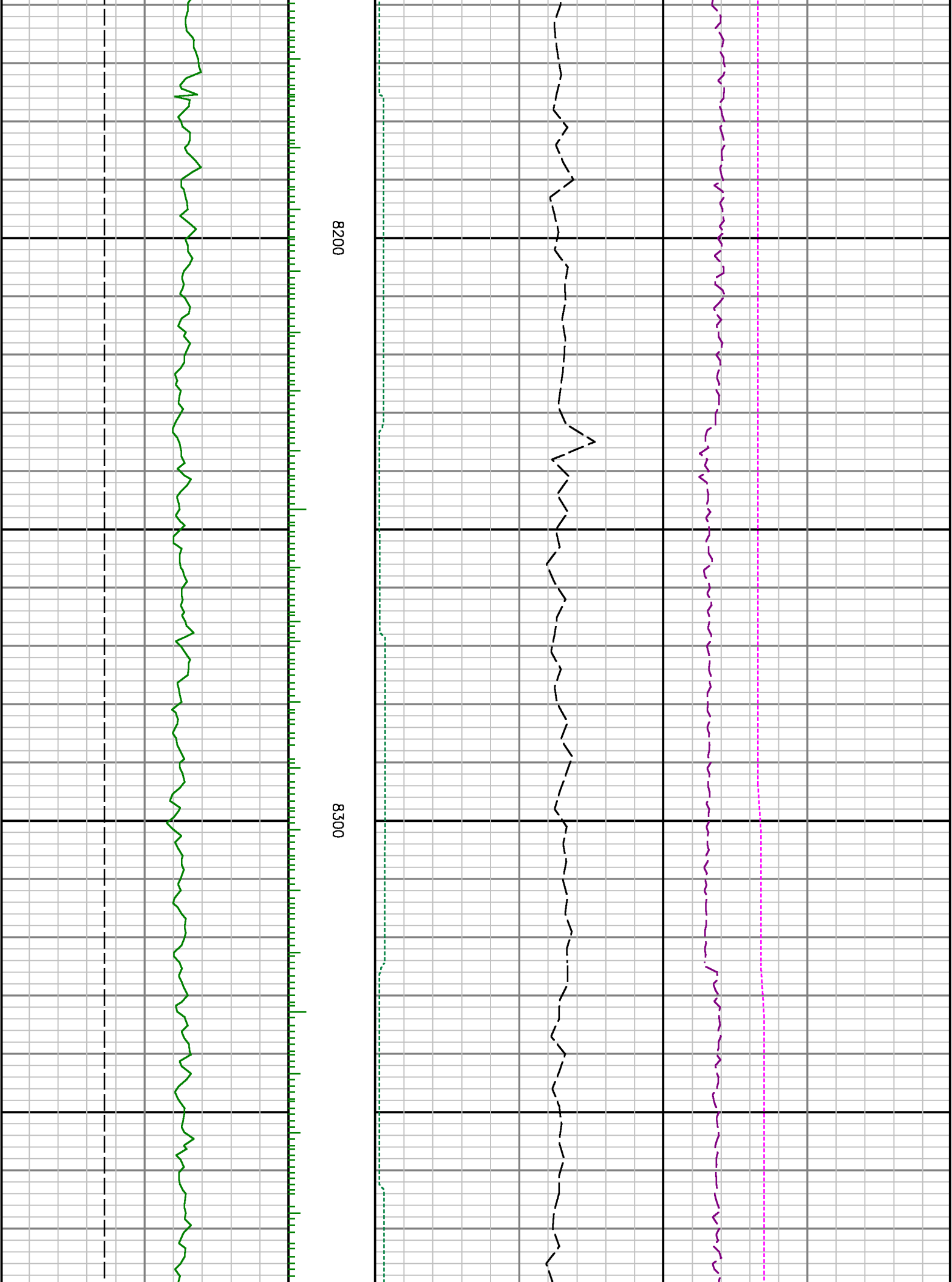
7500

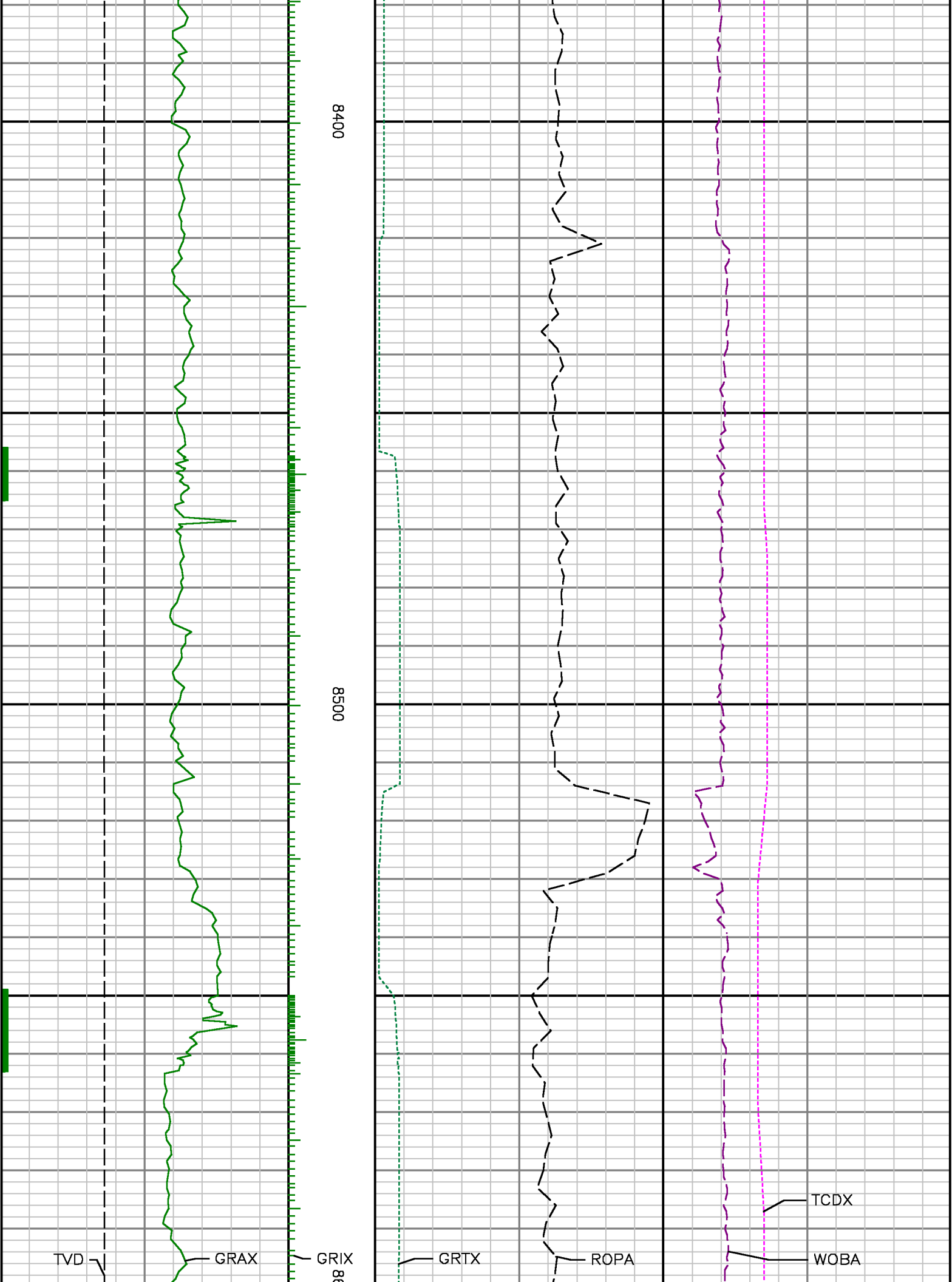


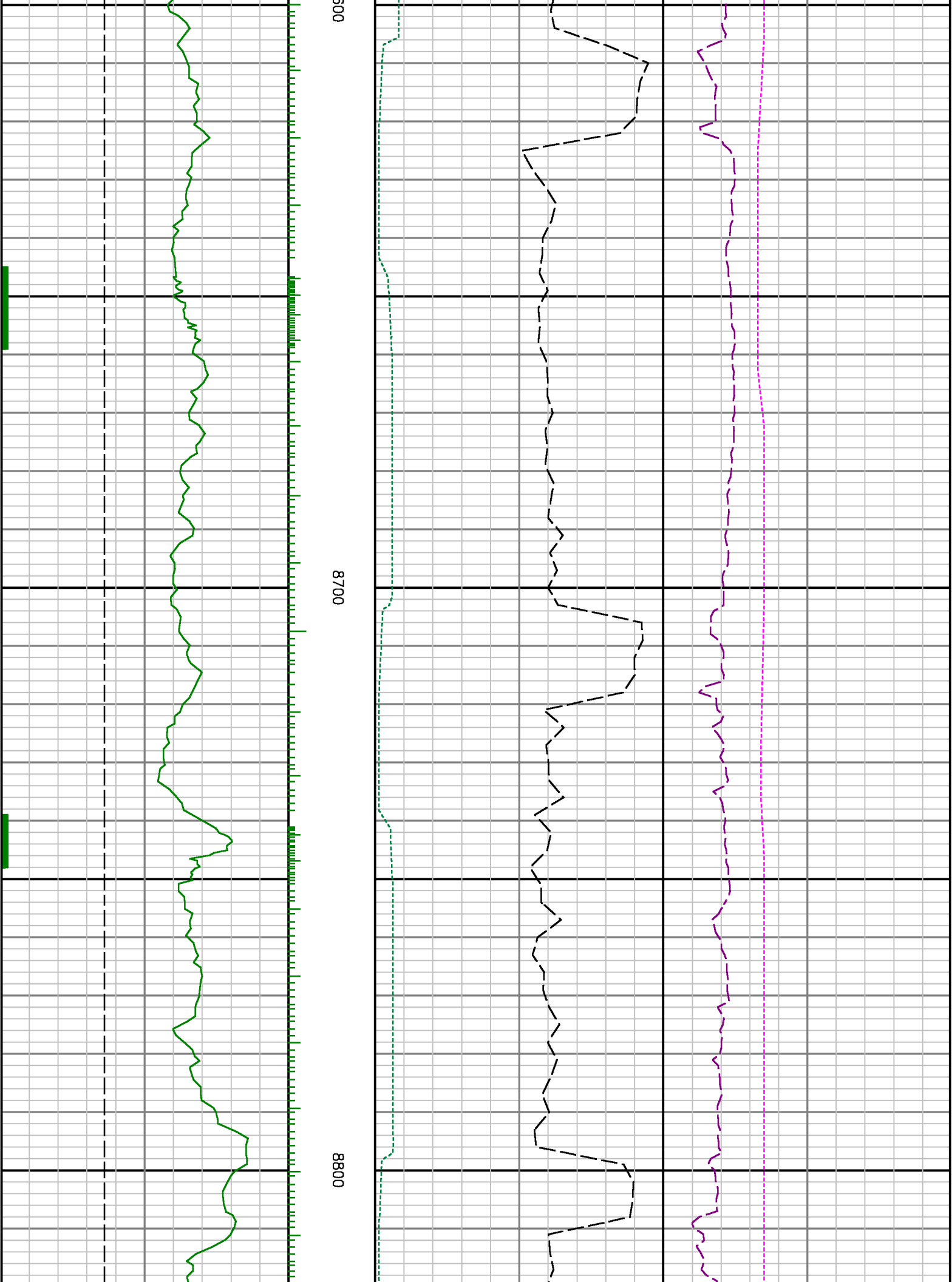


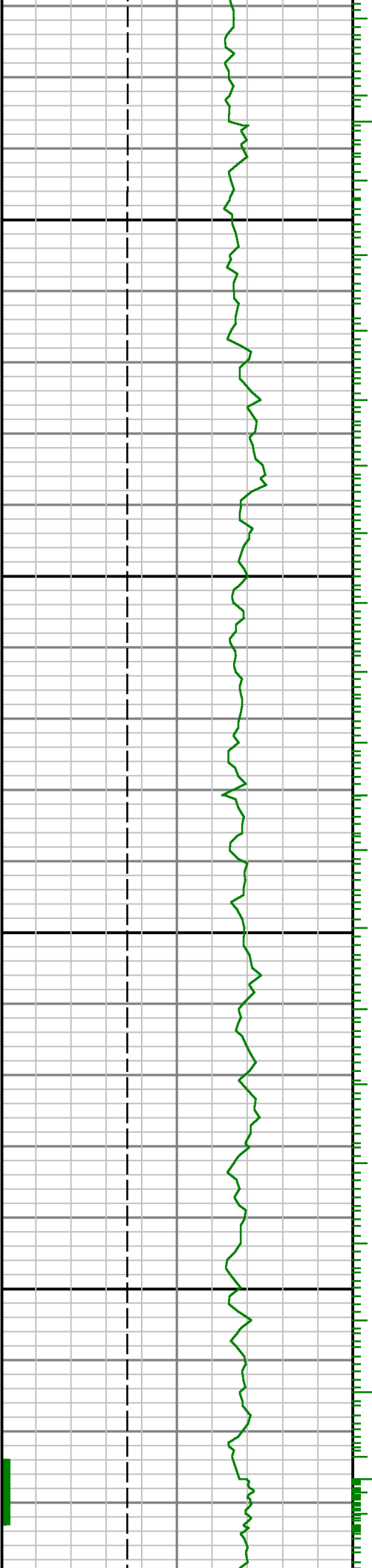






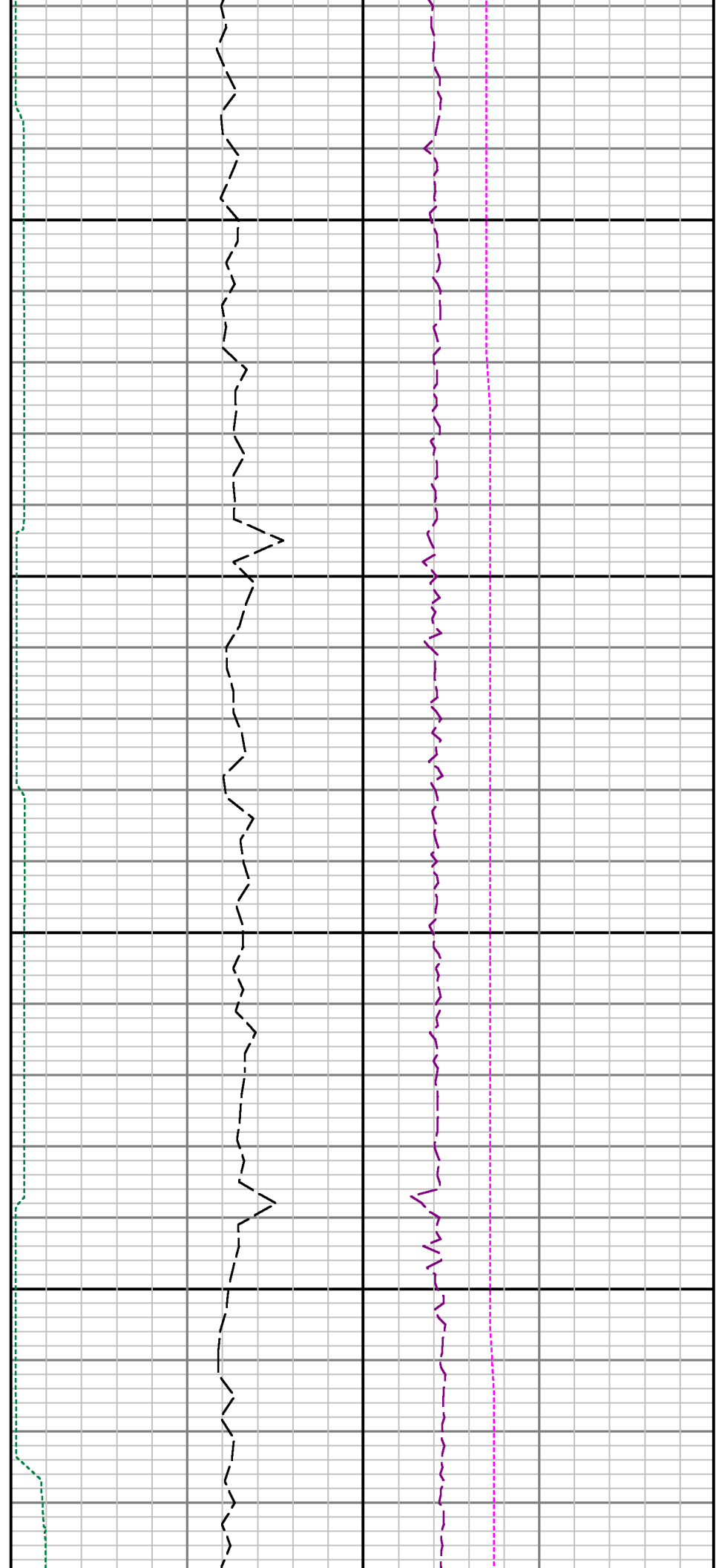


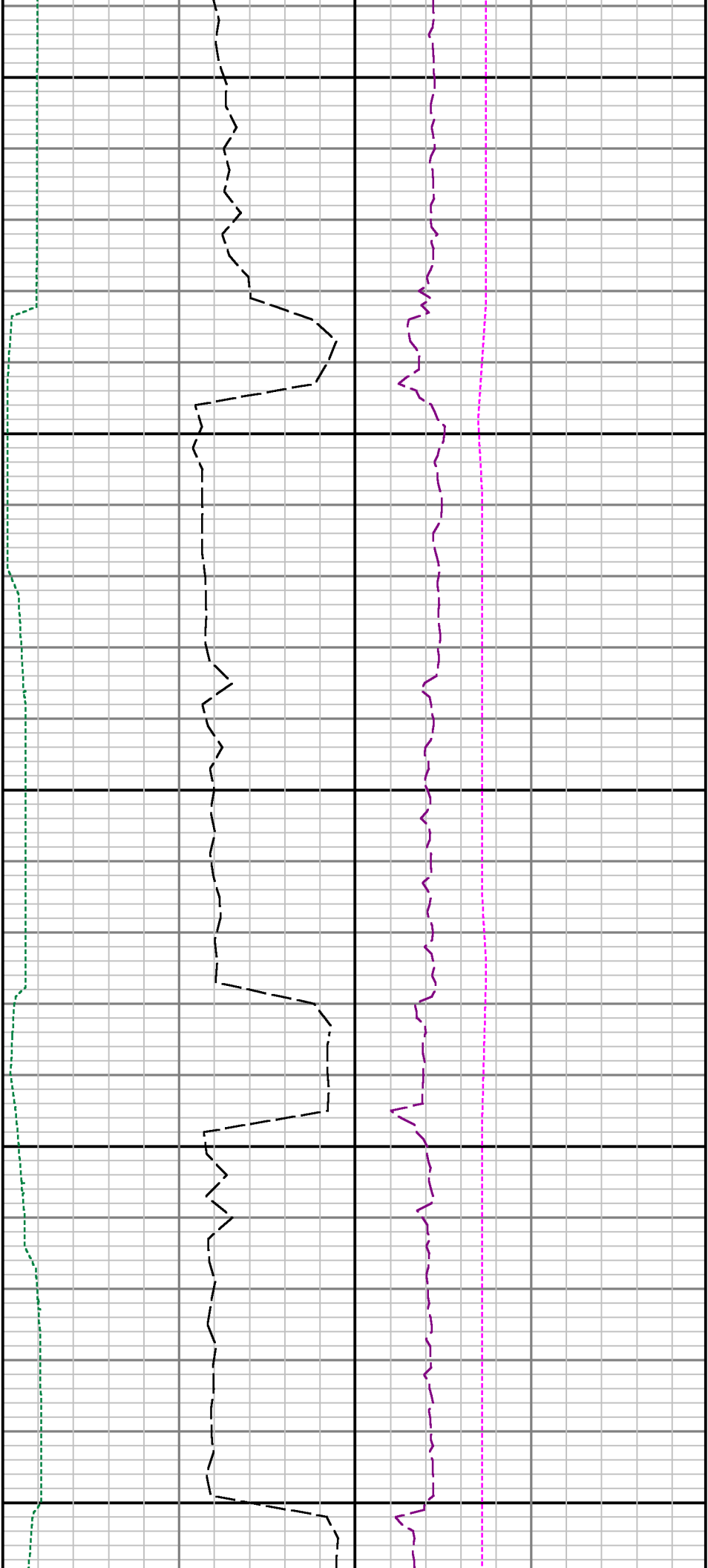




0068

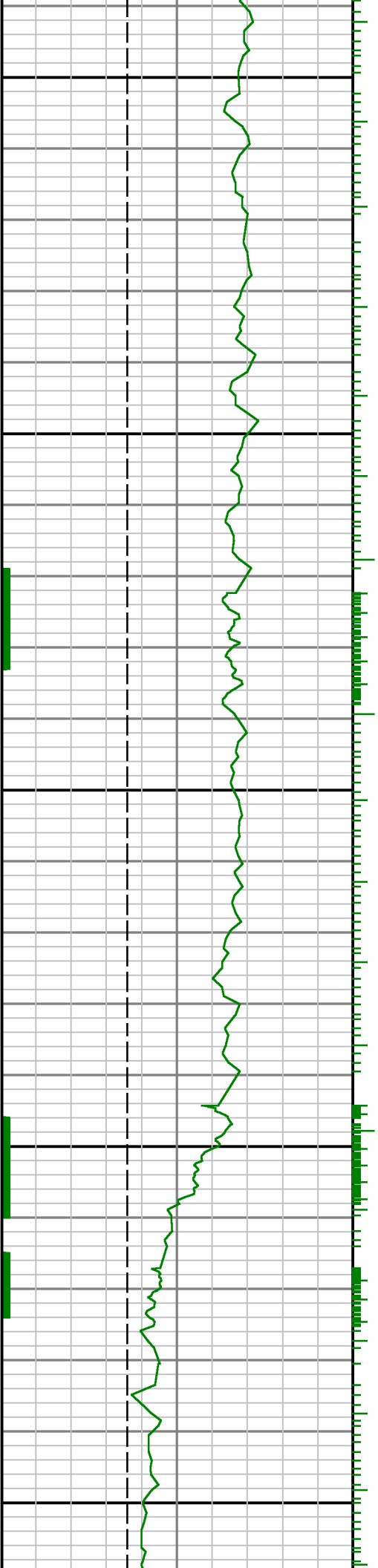
0006

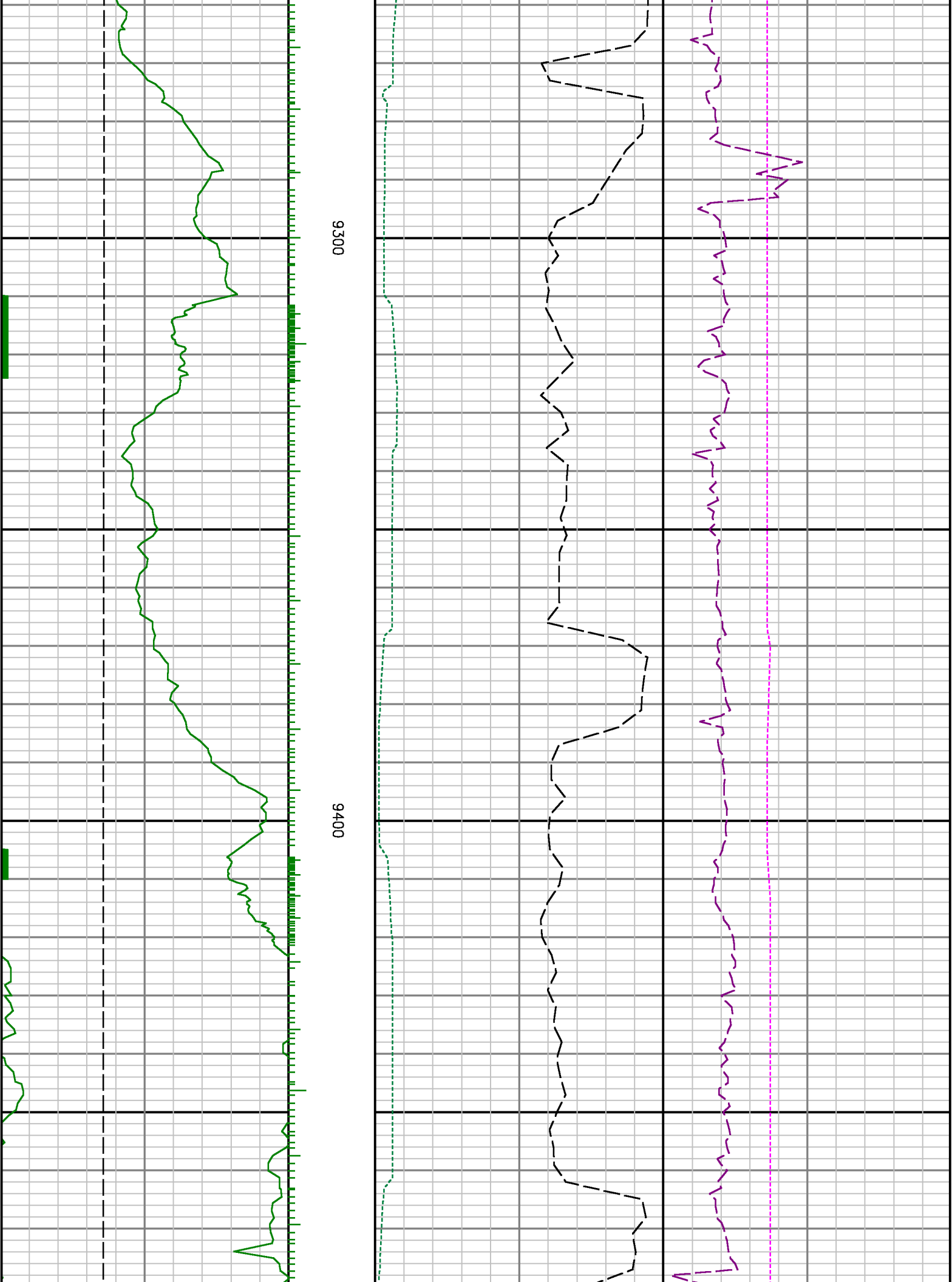


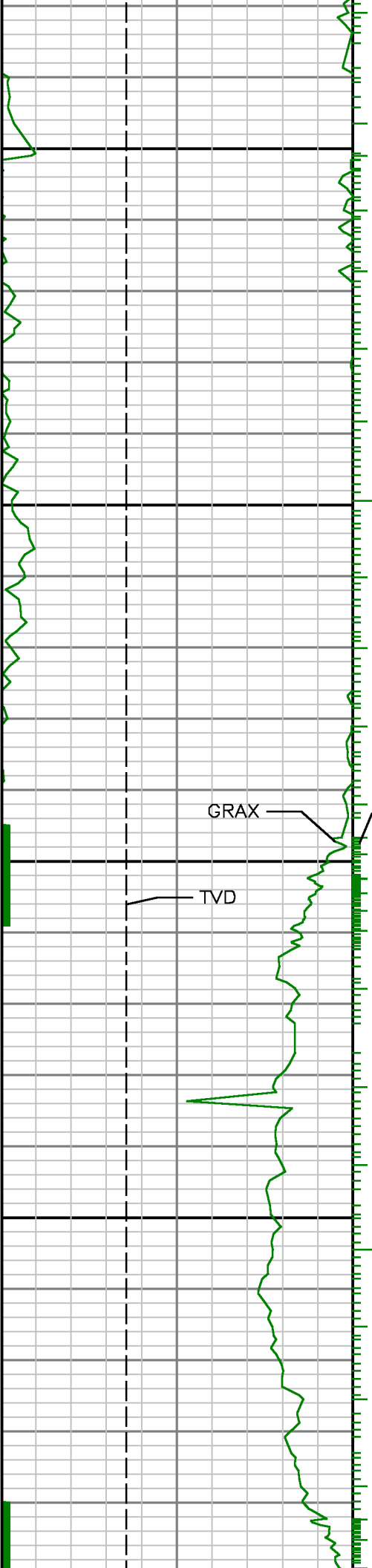


9100

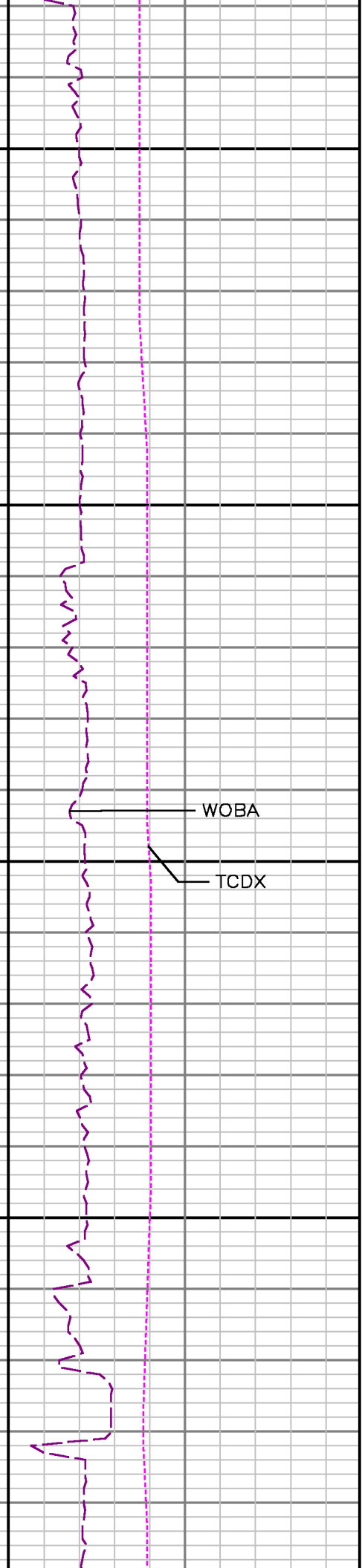
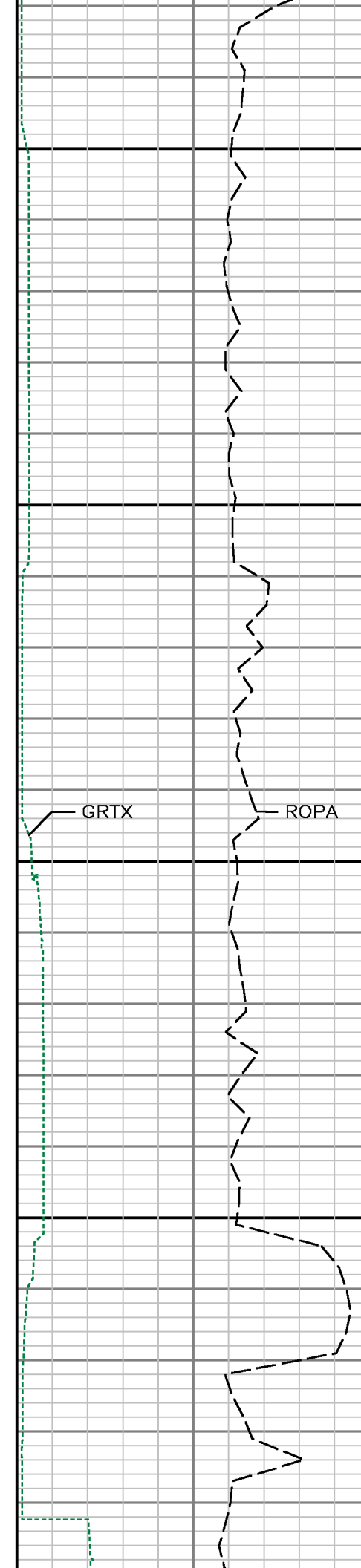
9200

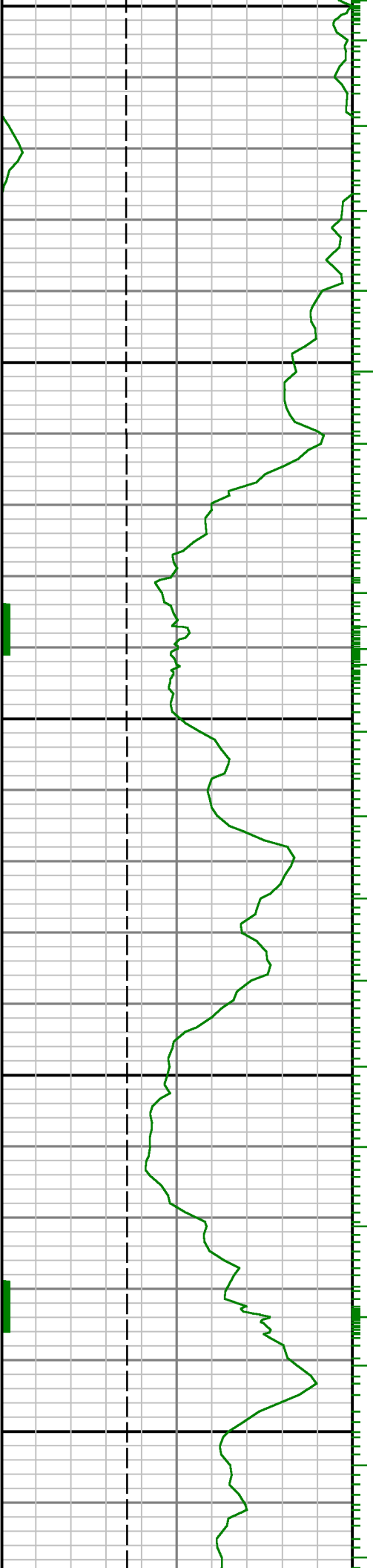




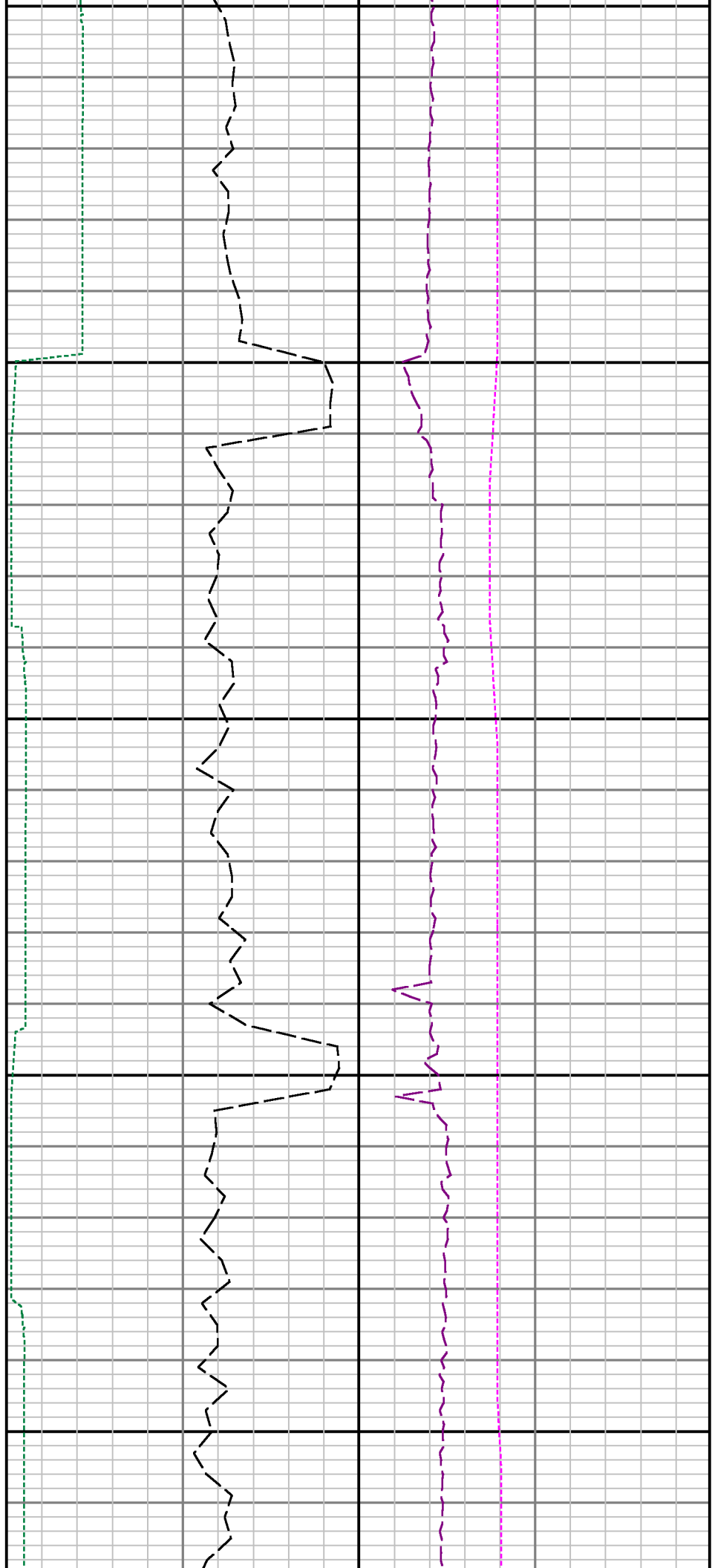


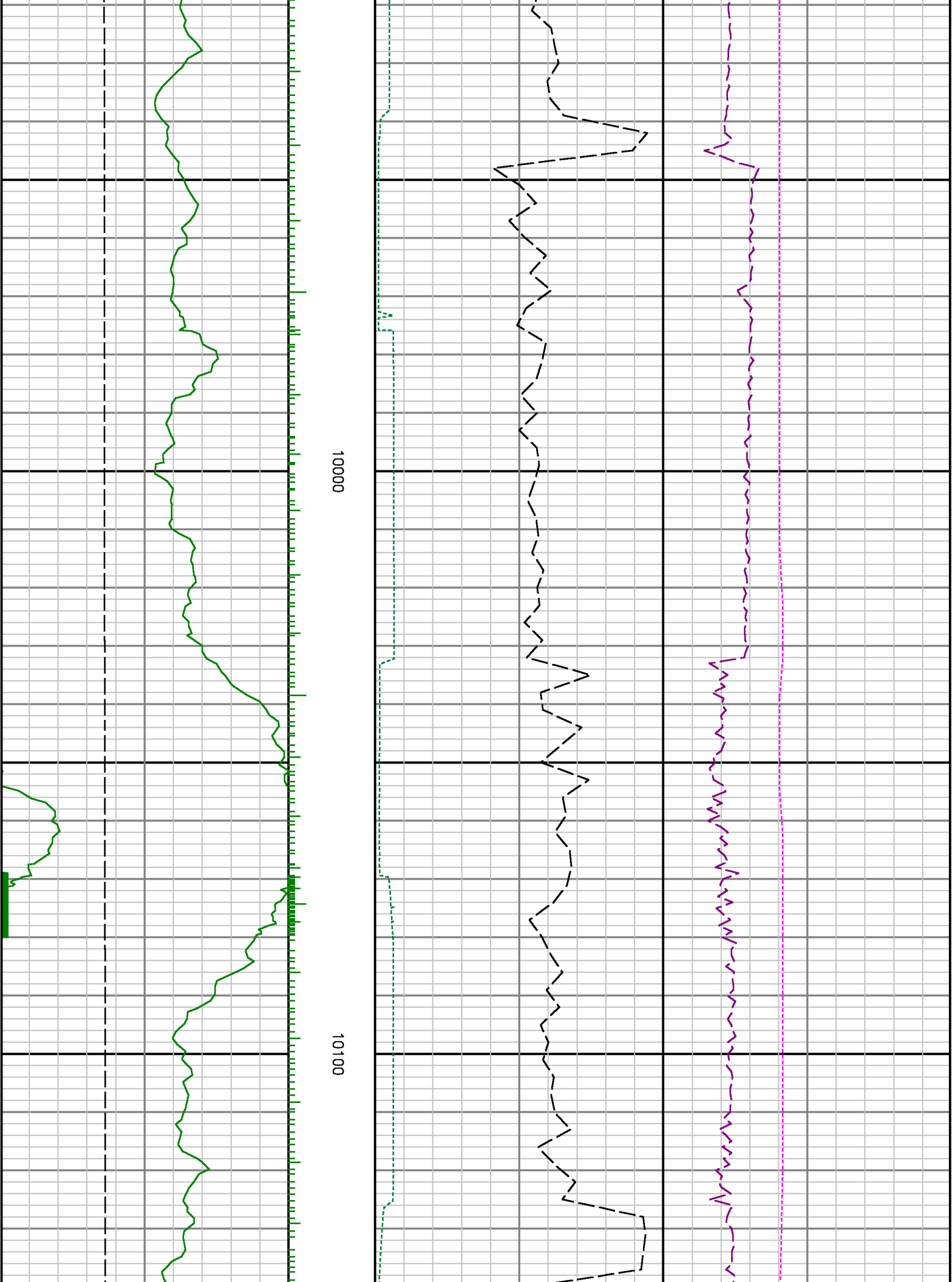
9500 9600

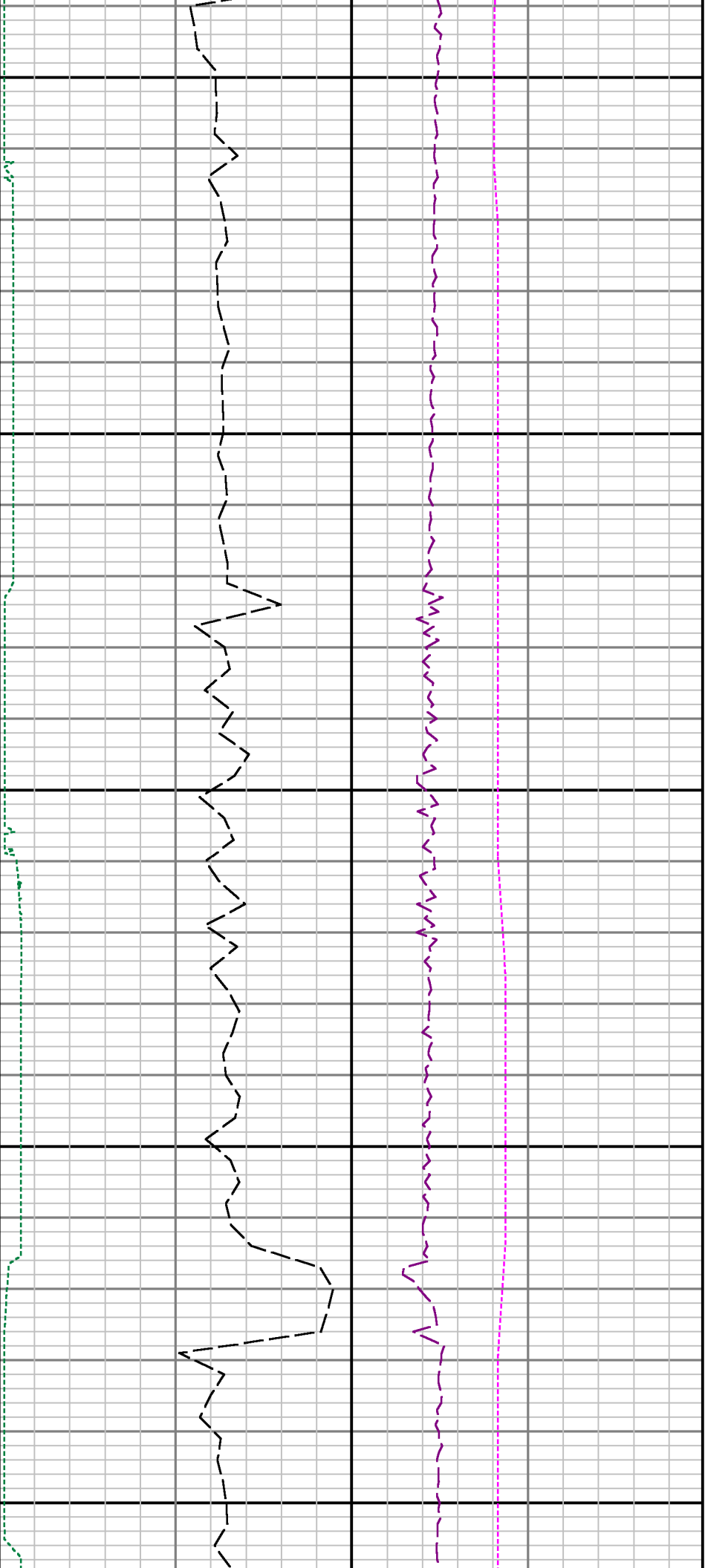




0070 0086 9900

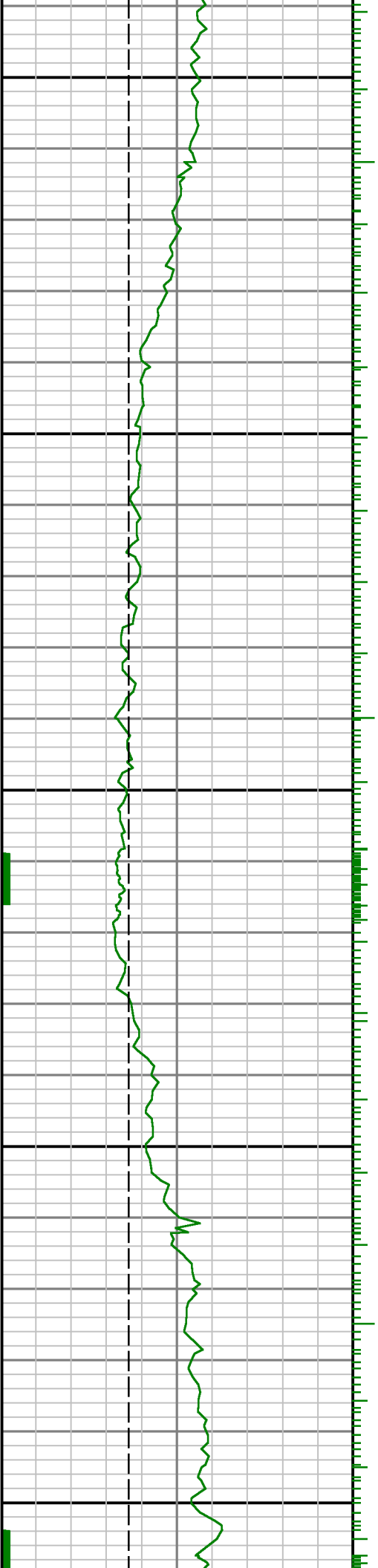


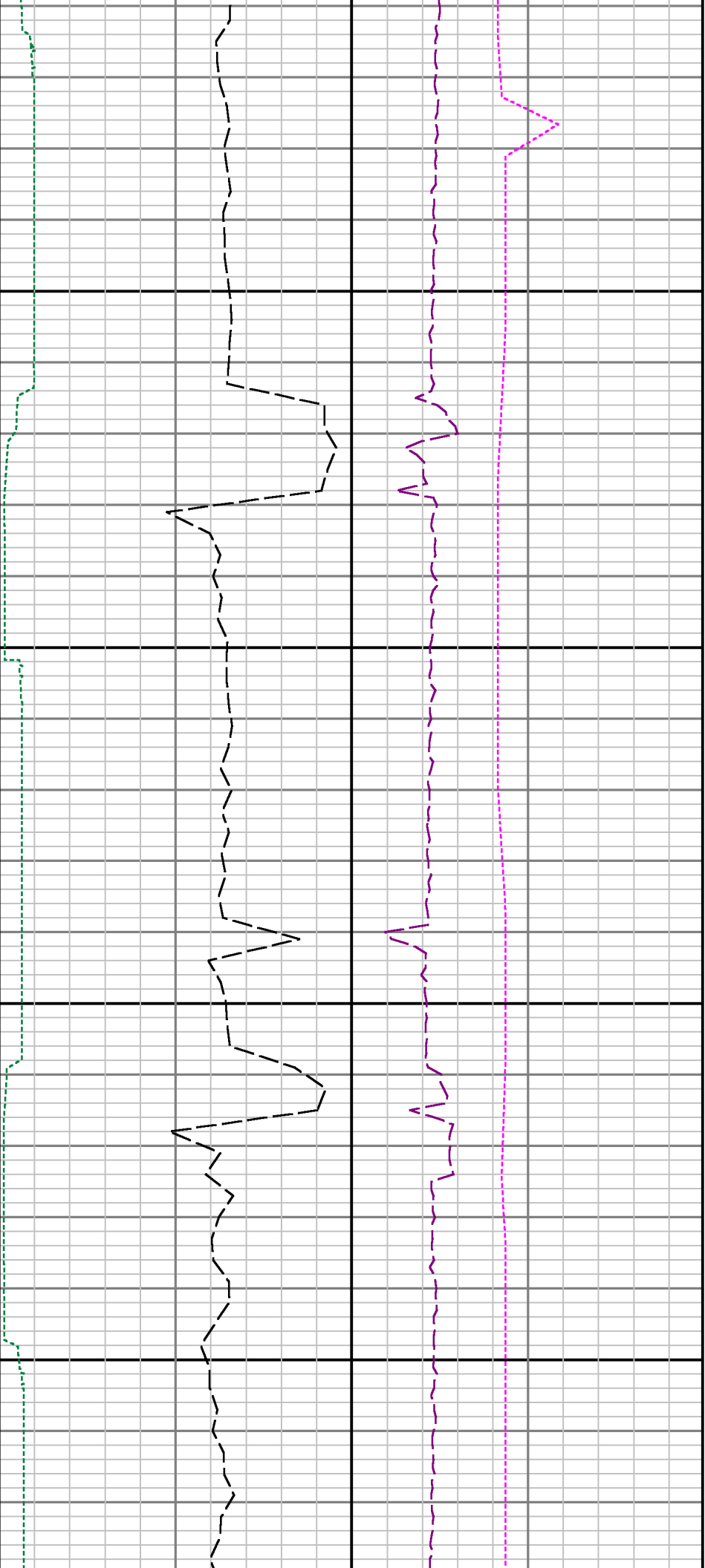




10200

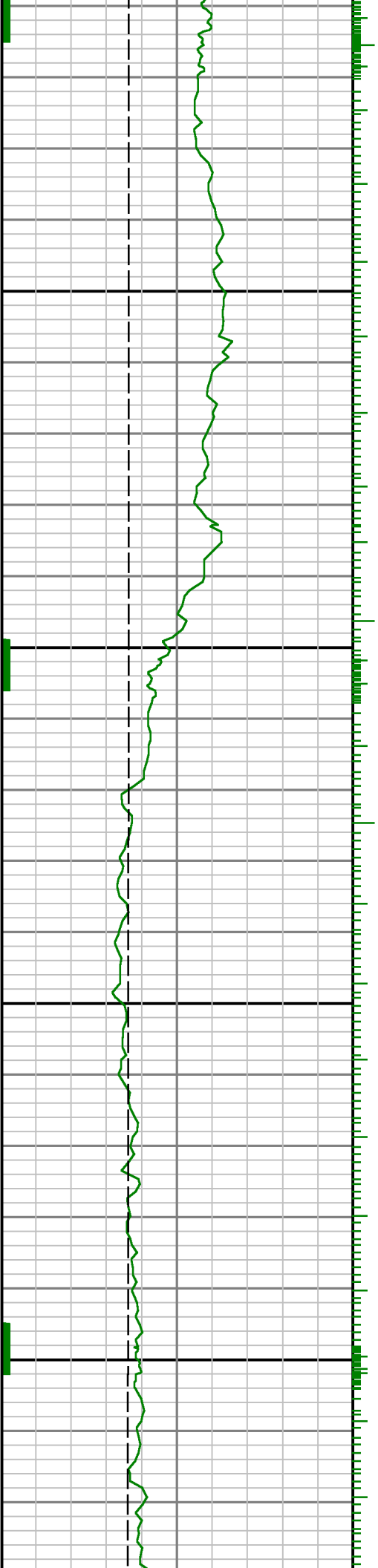
10300

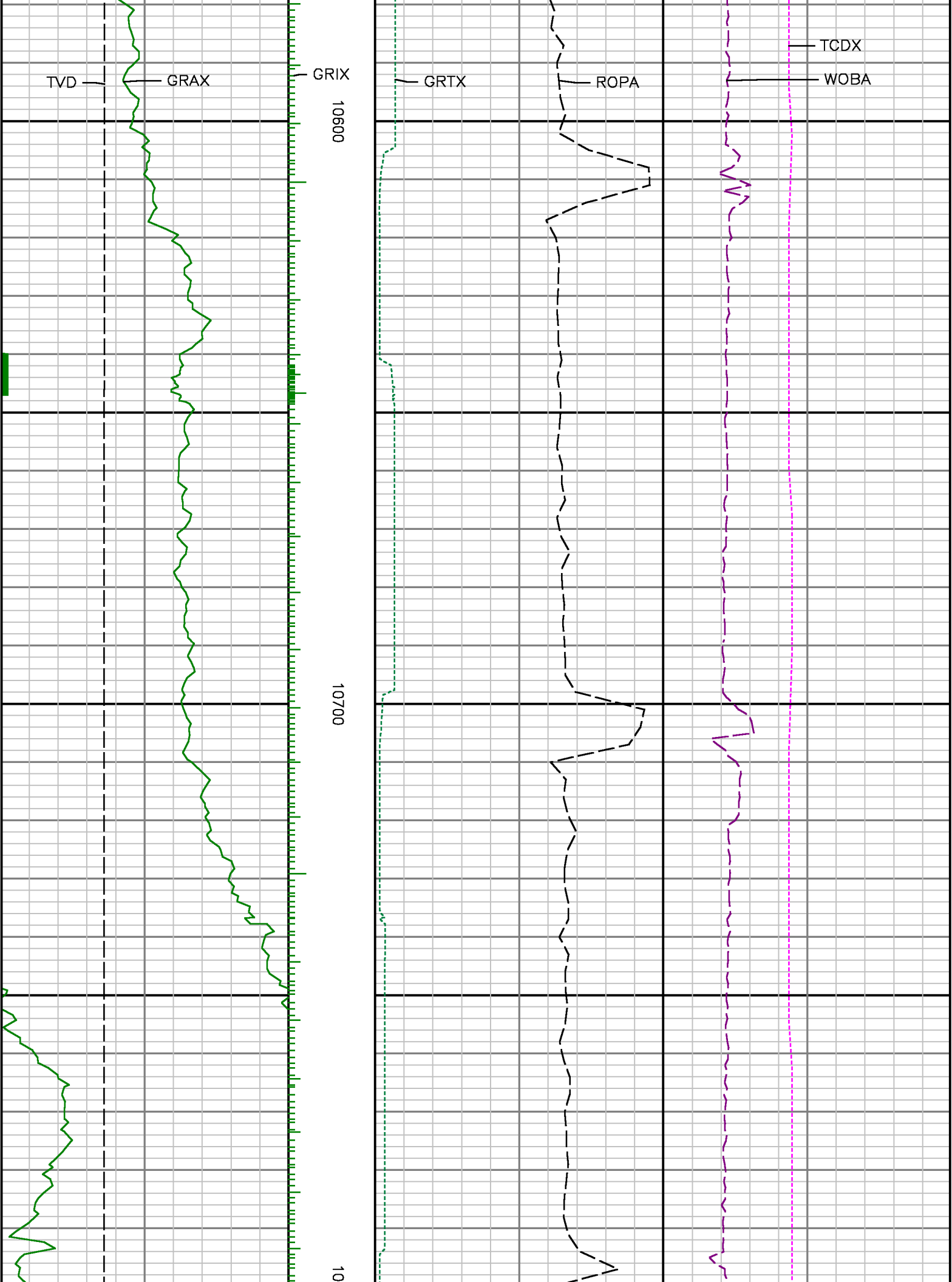


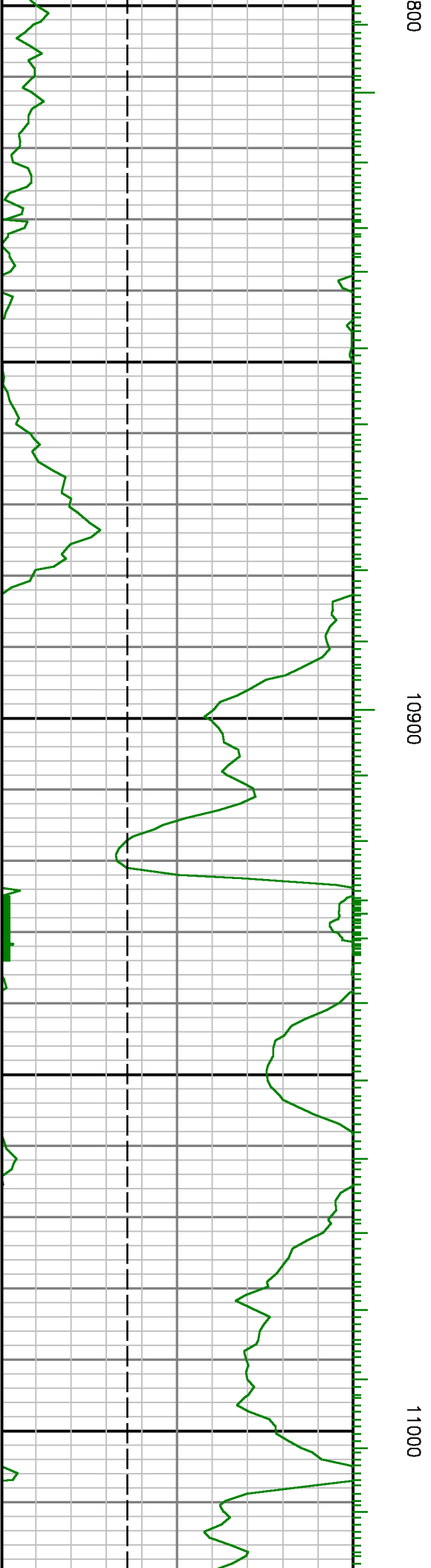
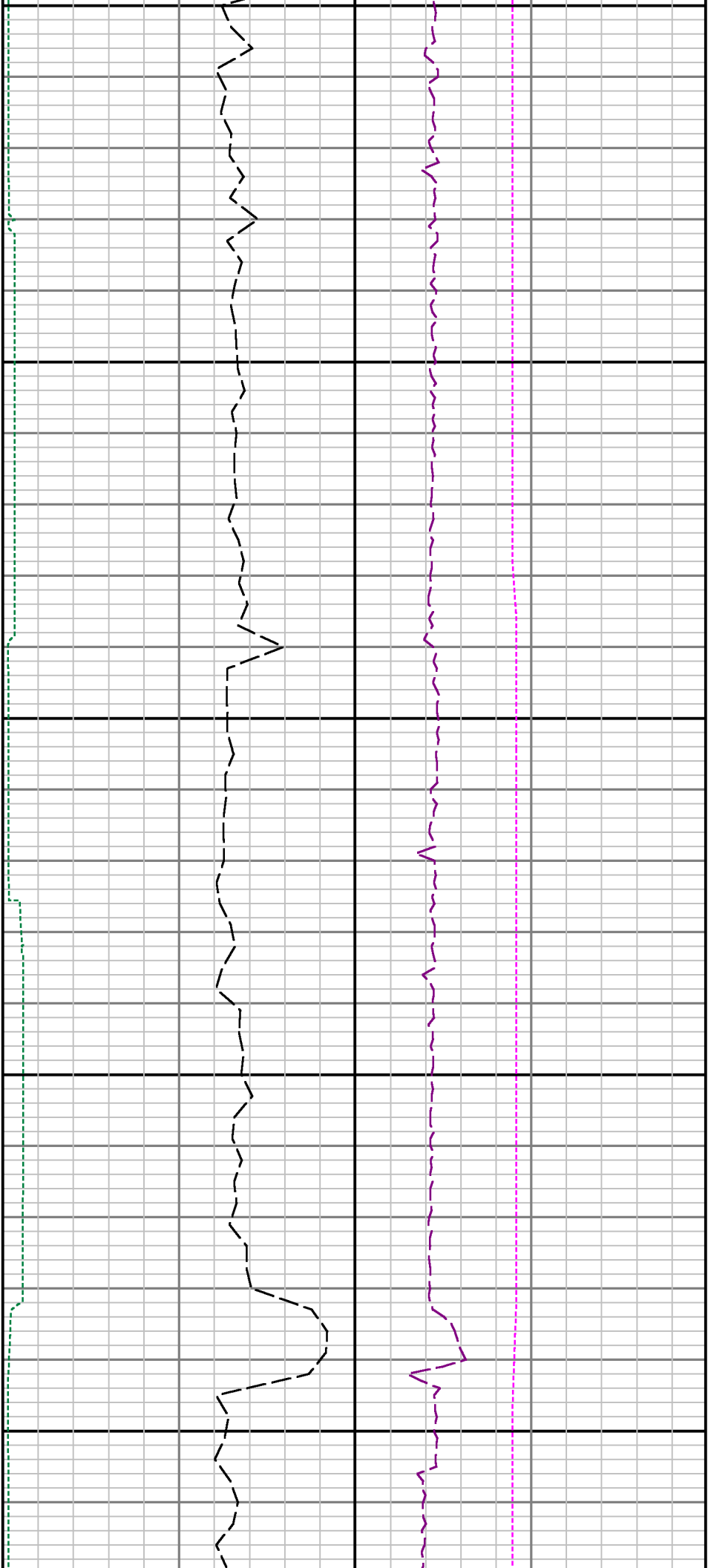


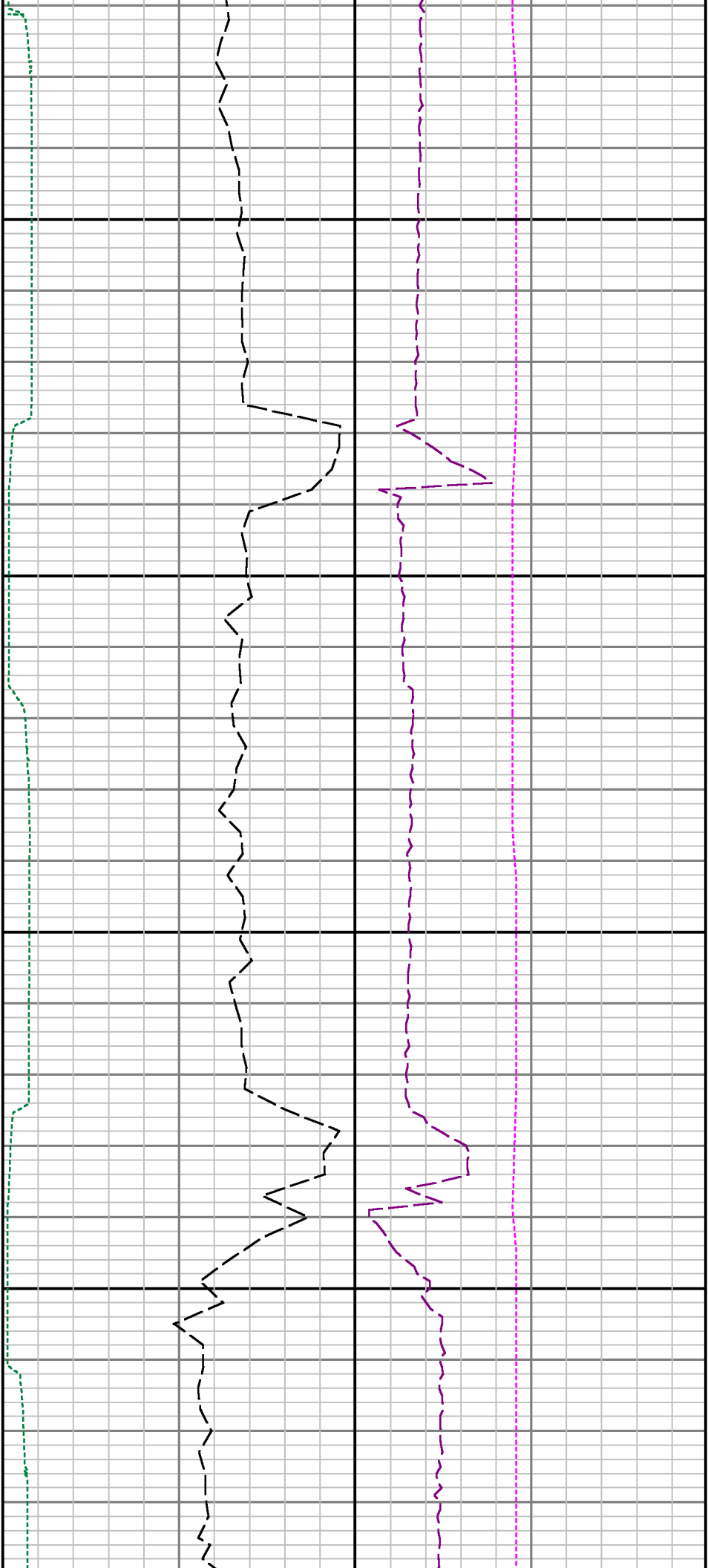
10400

10500



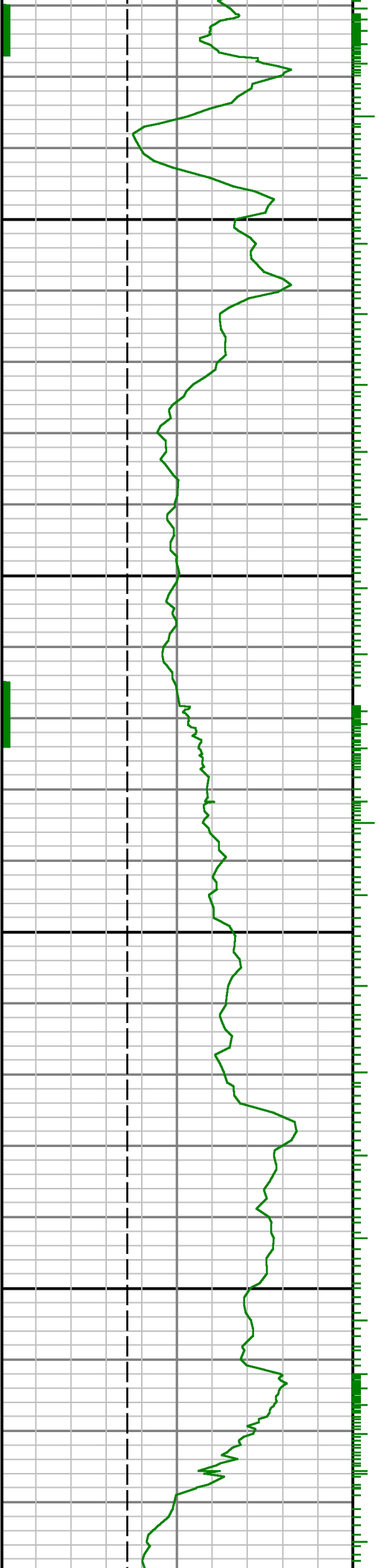


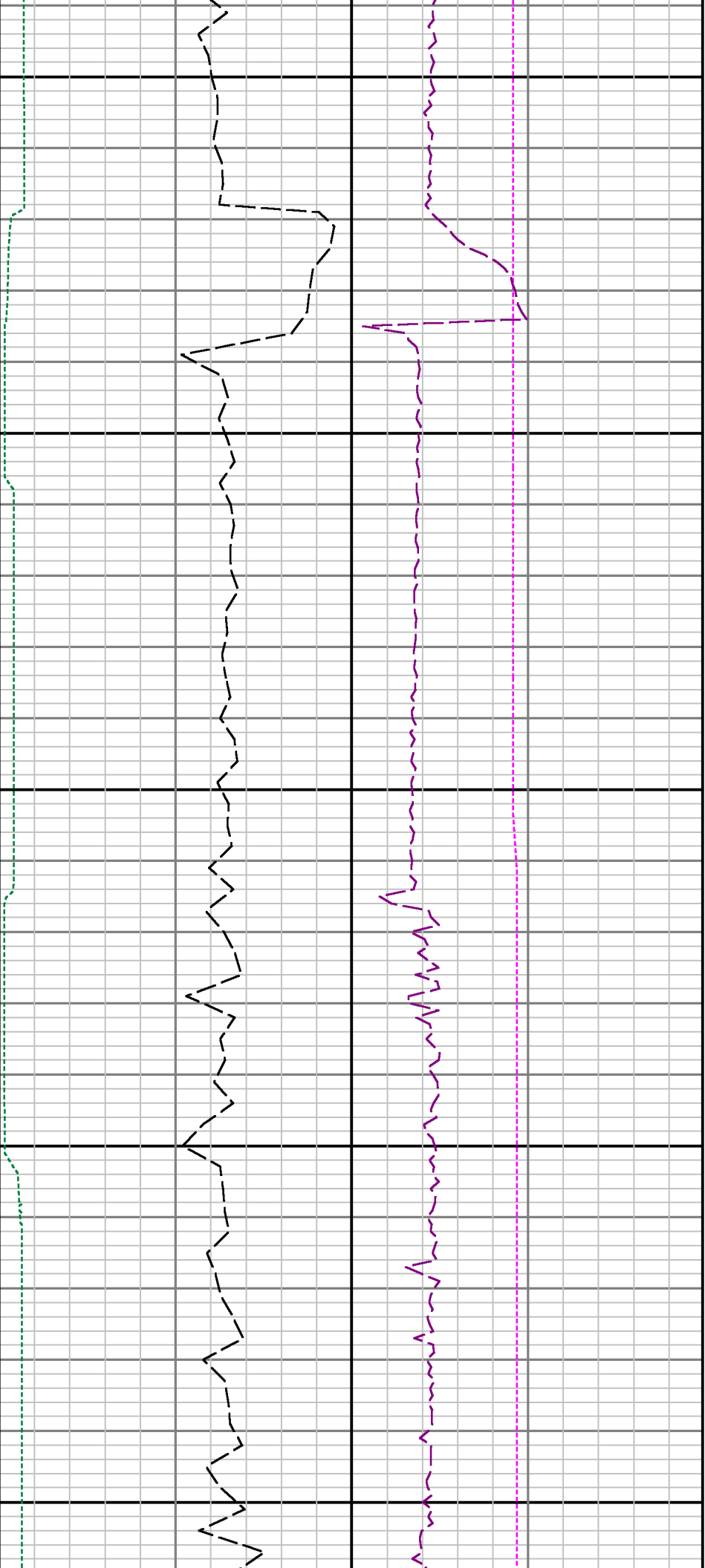




11100

11200





11300

11400

