



LWD REALTIME LOG

Gamma Ray

Scale: **Company: Anadarko**

1:600 **Well: JDB 15-10HZ**

Measured Depth **Field: Wattenburg**

Depth Reference: **County: Weld** **Country: United States**

Driller's Depth **State: Colorado**

Status: **Final Print** Surface Location: 040° 02' 43.314" N Other Services:

API No: 051234921800 Latitude: 104° 45' 27.731" W Directional

Job ID: 109810365 SEC: 15 TWN: 1N RGE: 66W

Permanent Datum (P.D.): Ground Level Elevation: 5153.00 ft Elev. KB: N/A
Log Measured From: Rig Floor Above P.D.: 17.00 ft Elev. DF: 5170.00 ft
Elev. GL: 5153.00 ft

Magnetic Field Reference

Dates		Interval		Magnetic Field Reference	
From: 2019-07-10	Drilled (ft)	Logged (ft)	Azi Reference North:	True Dip Angle: (deg)	66.30
To: 2019-07-10	Top: 1913.00	Top: 1870.00	Total Magnetic Field Strength: (mT)		52289
Spud: 2019-07-10	Bottom: 13443.00	Bottom: 13401.00	Mag to Reference North Correction: (deg)		7.85

Borehole Record

Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
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13.500	17.00	1913.00	9.625	25.00	17.00	1903.00
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7.875	1913.00	13443.00				
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Mud Record

Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Inc Az (Start)	Inc Az (End)
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Diesel-Oil Based Mud	1913.00	13443.00	7.875	11530.00	21.01 111.62	92.07 1.70
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Acquisition System		Software Version		Other	
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Cadence	RT 5.2		Rig: Akita 522		
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Plot Studio	5.2.8472.1		Contractor: Akita Drilling		Unit: D&E
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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 (ft)	Bottom (ft)	From (ft)	To (ft)	Start Logging	End Logging	
1	1	7.875	PDC	2.00	Steerable	1870.00	13401.00	1913.00	13443.00	2019-07-10 01:54	2019-07-10 05:38	44.05

Crew

Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite	Name		Arrive Wellsite	Depart Wellsite
John Mason		2019-07-09	2019-07-12	Michael Parks		2019-07-09	2019-07-12				

Mud Properties Record

Date / Time	Run No.	Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2019-07-09 18:00	1	1913.00	Diesel-Oil Based Mud	9.5	16	N/A	9.0	68/21	Active Pit	31000	0.00
2019-07-10 18:00	1	6477.43	Diesel-Oil Based Mud	9.3	18	N/A	8.0	66/25	Active Pit	36000	0.00
2019-07-11 18:00	1	11042.00	Diesel-Oil Based Mud	9.2	16	N/A	8.0	67/23	Active Pit	32000	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	EvoOne	G650-0315	Gamma (single)	8.30	42.39	6.500	0.000
1	EvoOne	G650-0315	Directional (mag)	9.49	43.58	6.500	0.000

Service and Tool Mnemonics

Mnemonic	Name	Description
MWD	EvoOne - Dir Gamma	EvoOne

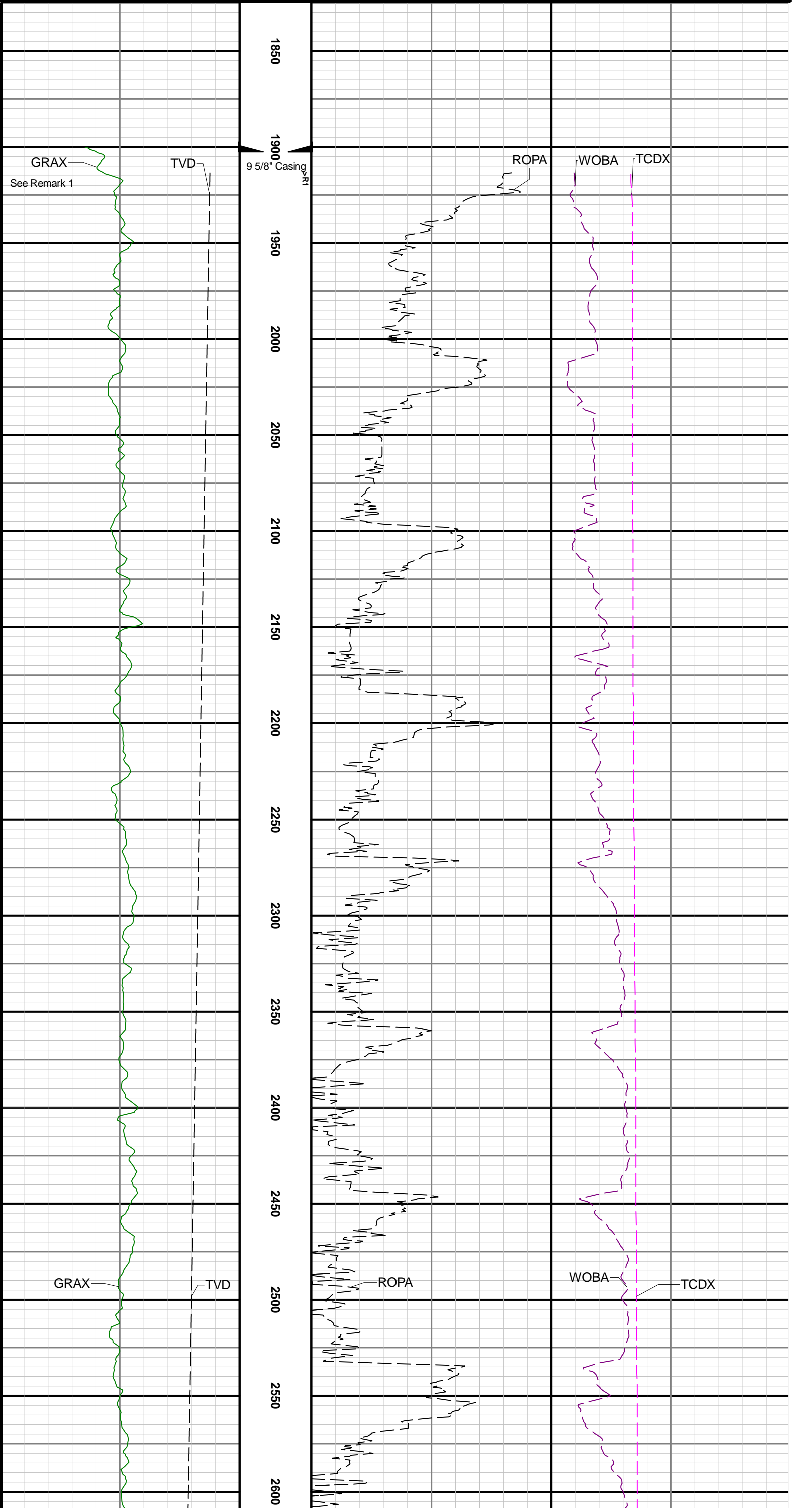
Comments

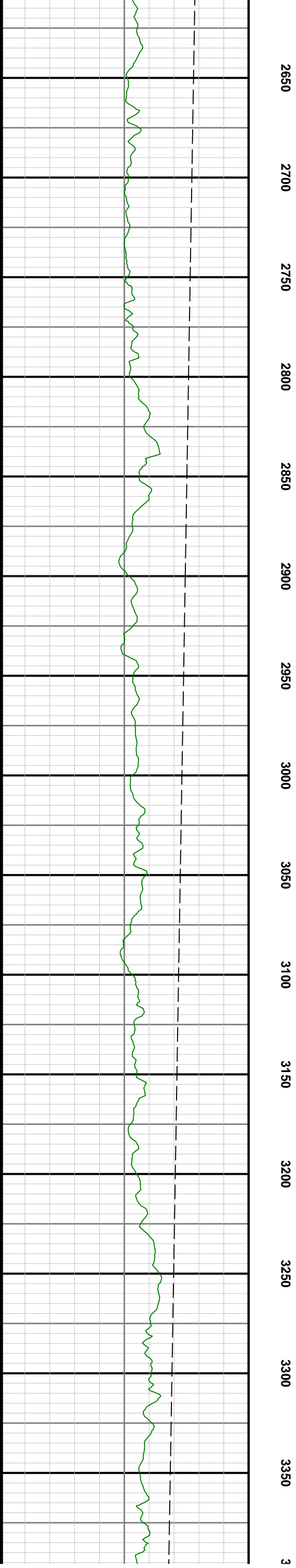
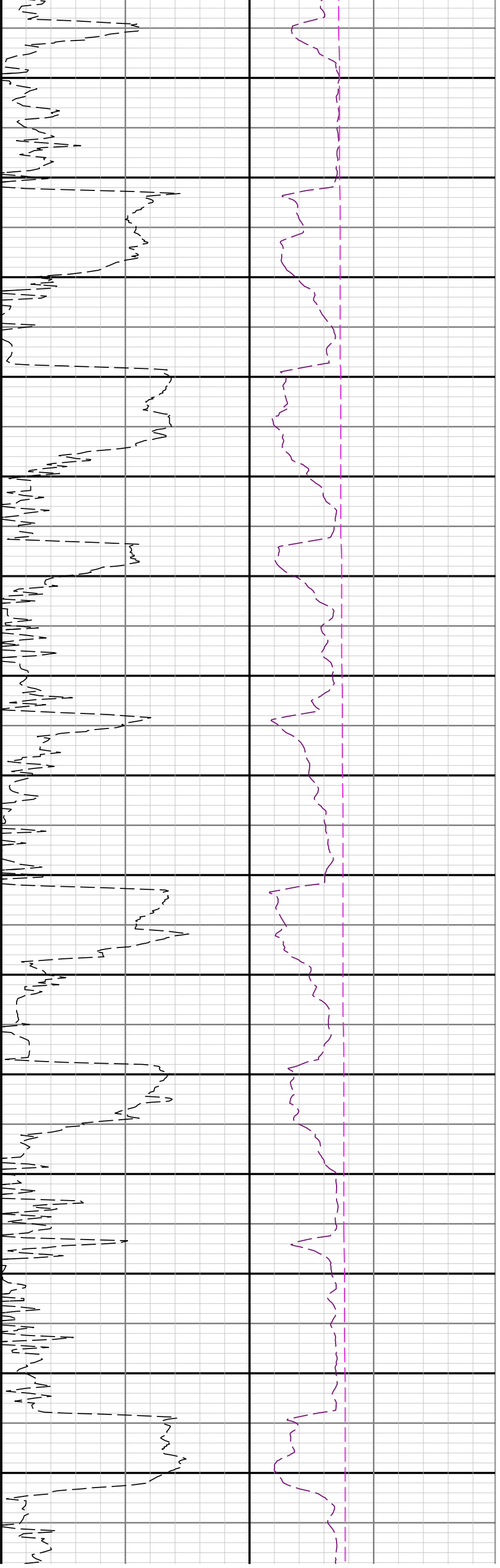
- Depth measurements were obtained from a depth control system not supplied by Baker Hughes. Due to lack of control by Baker Hughes logging engineers depth calibrations and measurements could not be independently verified and the unverified depths as supplied to Baker Hughes are being used to represent logging data.
- Gamma Ray (GRAX) scale is presented from a 0 to 200 API scale at the request of the customer.
- Baker Hughes run 1 utilized 6 1/2 inch Evo One services (Directional and Gamma Ray) behind a 7 7/8 inch bit and steerable assembly from 1913 to 13443 feet MD (1864 to 7422 feet TVD).

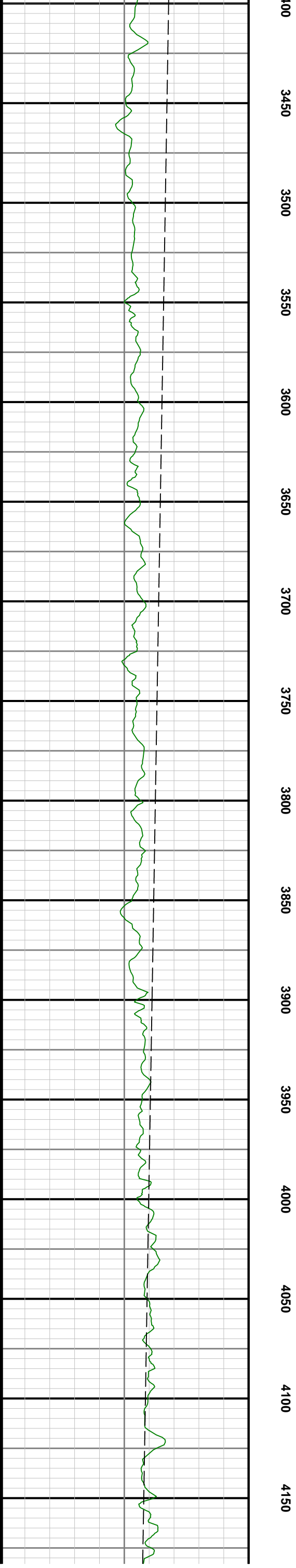
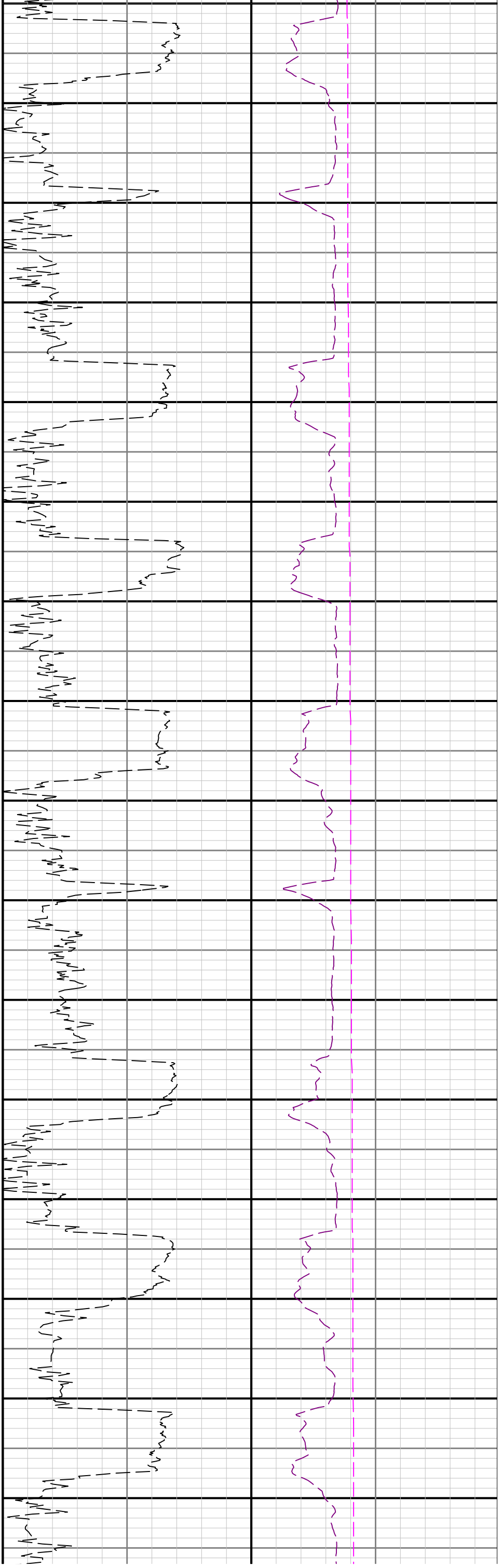
Remarks

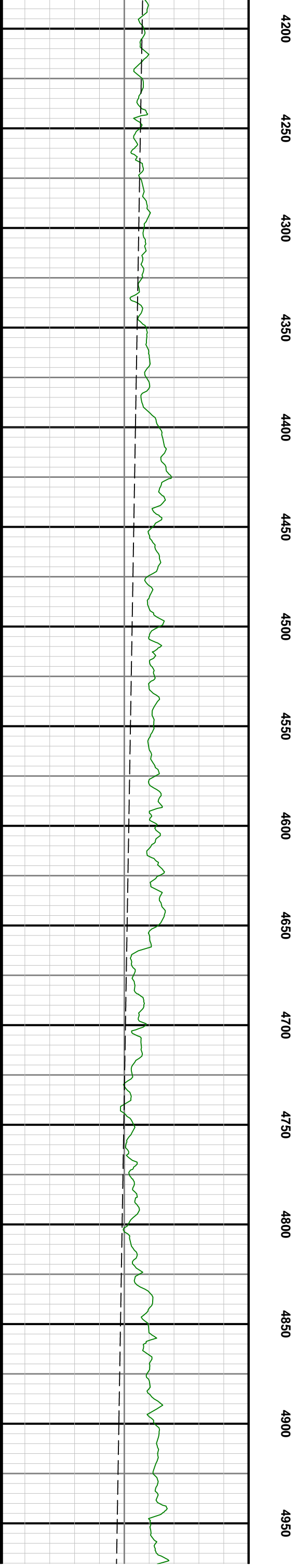
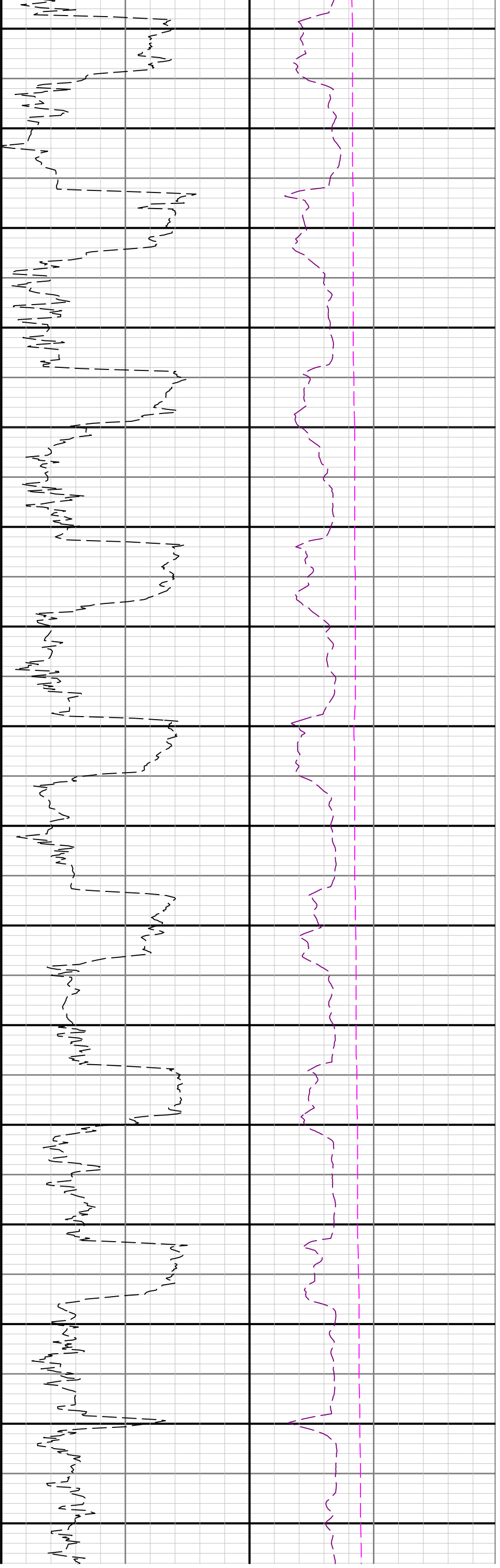
Number	Depth (ft)	Hole Section (in)	Run No.	Remark
1	1913.00	7.875	1	Baker Hughes began logging at 1913 feet MD (1865 feet TVD) per customer request.
2	13401.00	7.875	1	The interval from 13401 to 13443 feet MD (7422 feet TVD) was not logged due to sensor to bit offset at well TD.

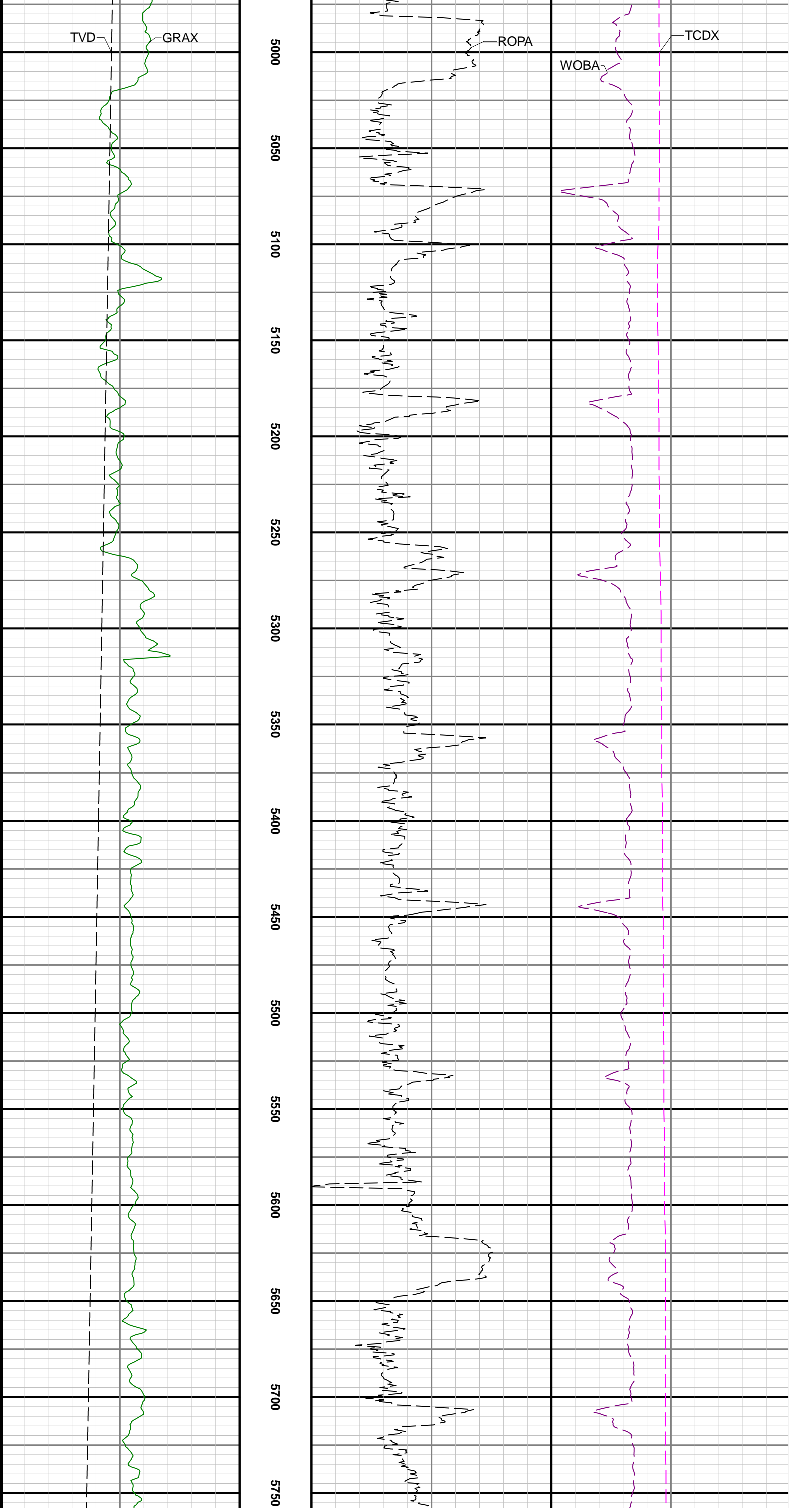
Gamma Ray - Apparent 3 ft Average [GRAX]		MD 1:600 feet	Depth Averaged ROP 3 ft Average [ROPA]		Weight On Bit, Average 5 ft Average [WOBA]	
0	200		1000	0	0	100
API			ft/h		klb	
True Vertical Depth [TVD]					Downhole Temperature [TCDX]	
8000	1000				0	300
ft					degF	

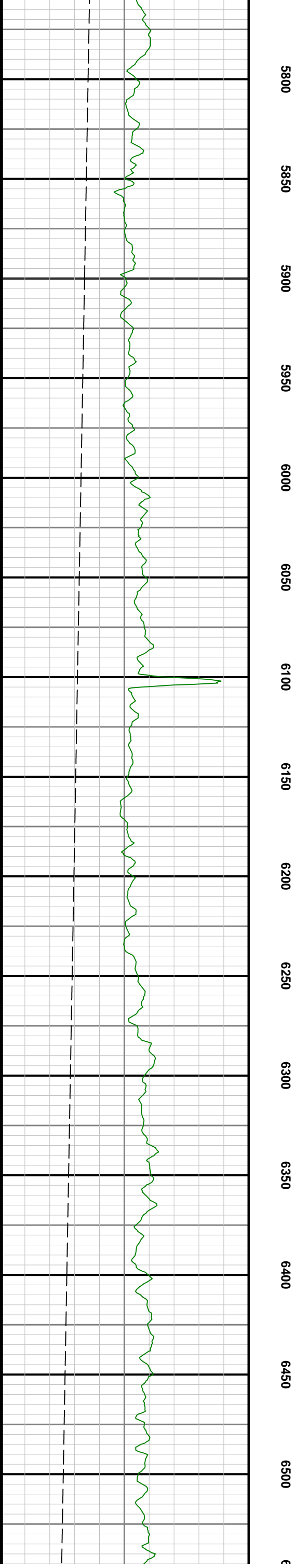
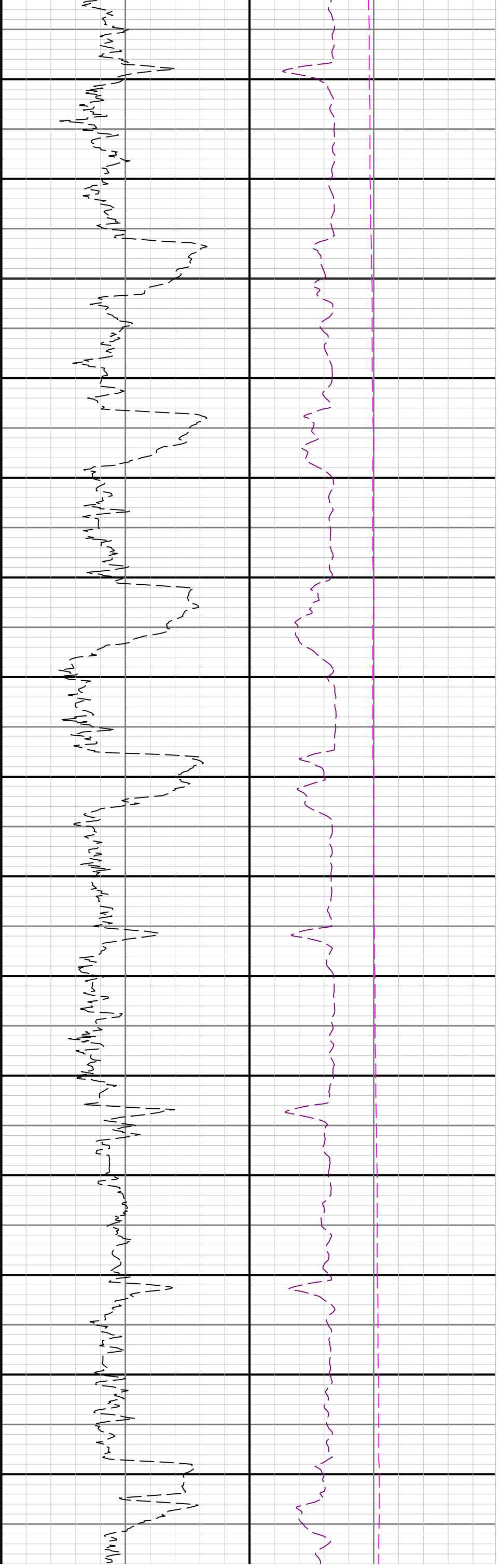


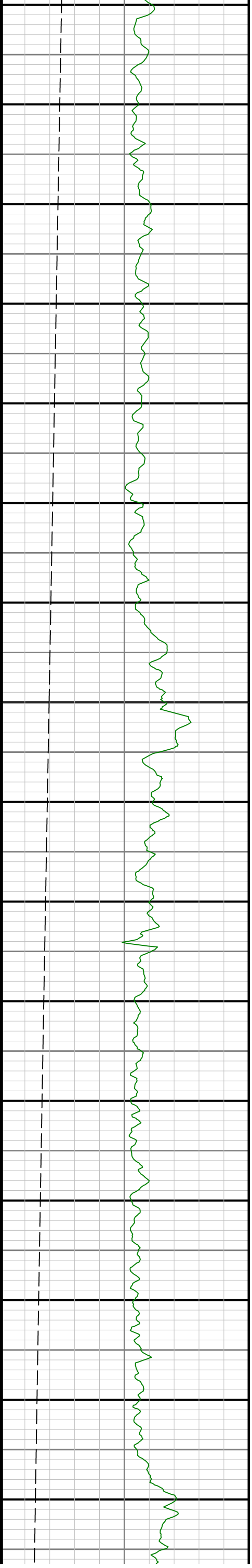
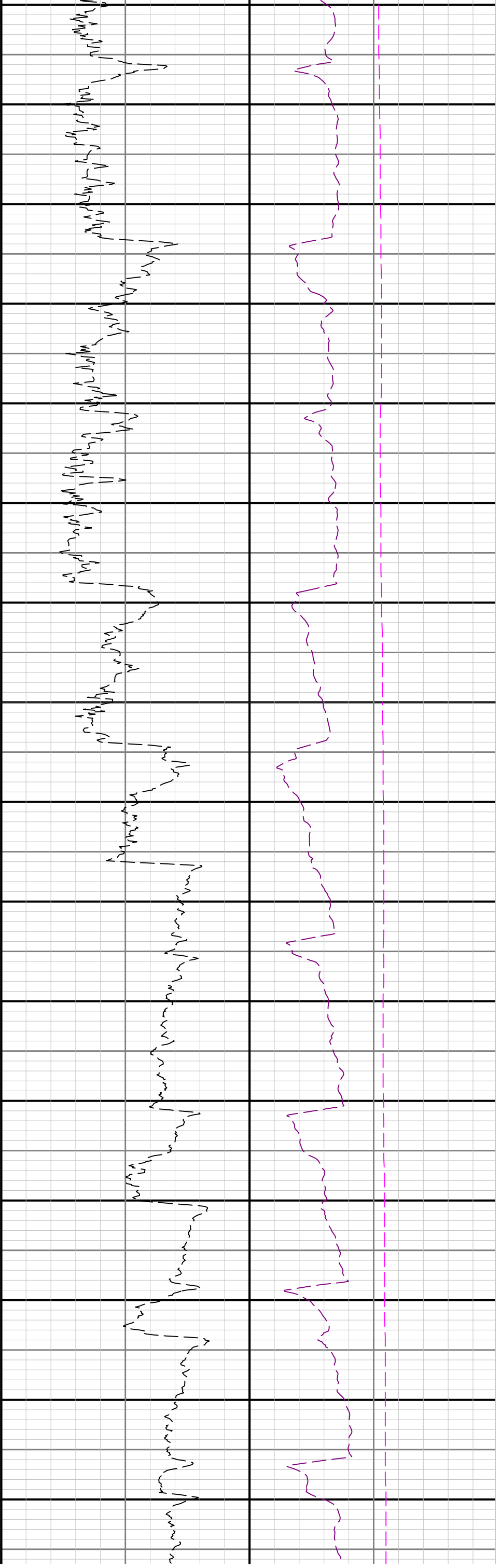


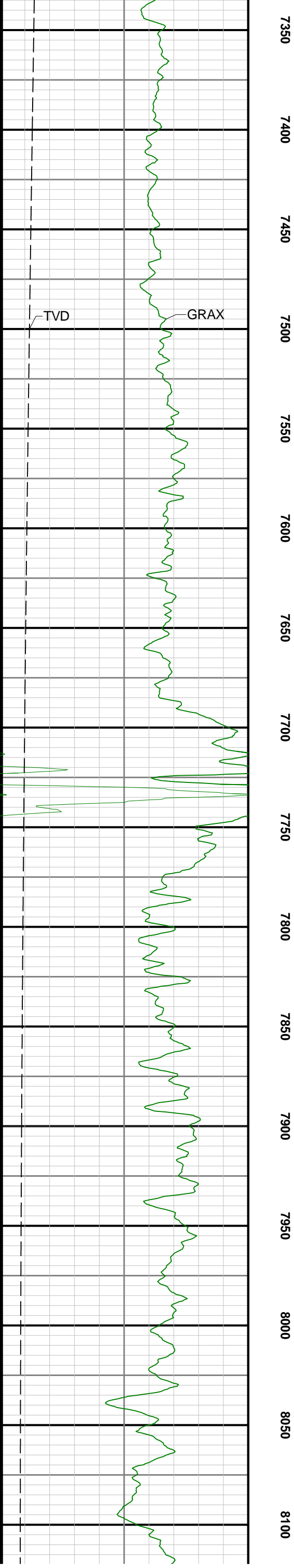
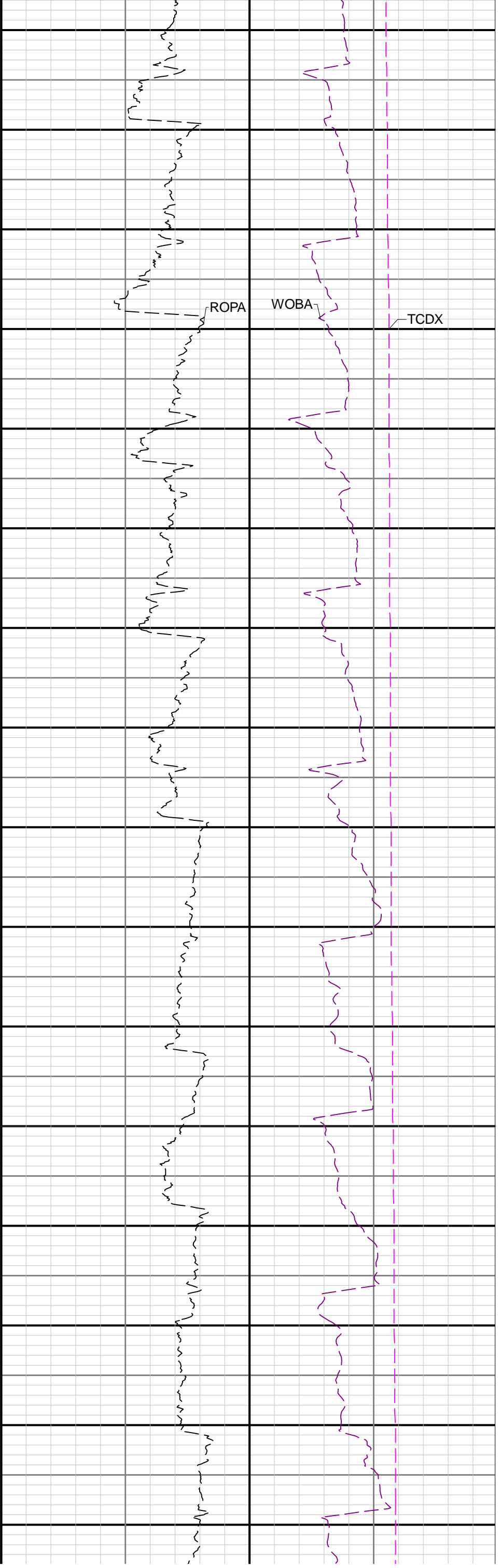


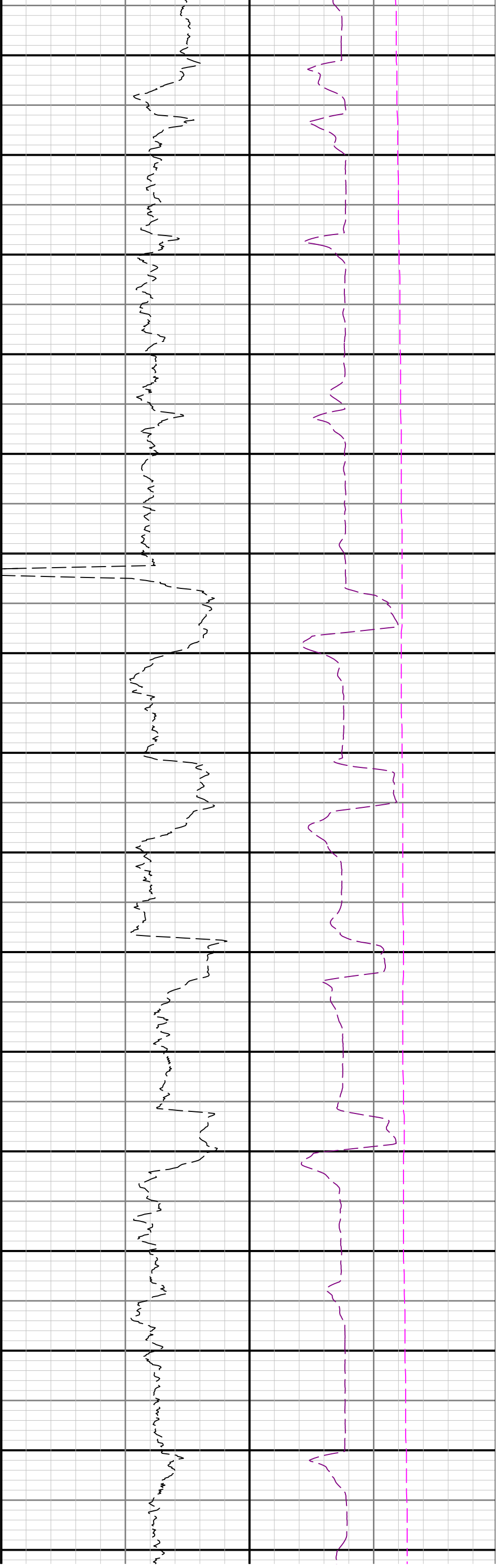












8150 8200 8250 8300 8350 8400 8450 8500 8550 8600 8650 8700 8750 8800 8850 8900

