



CATHEDRAL

Cathedral Energy Services
1949 North Pyrite Road
Casper, Wyoming 82604

145398

5":100' - MD

11/10/2014 9:16:11 AM

Oper. Company: Encana Oil & Gas (USA) Inc.

Country: U.S.A.

State / Province: Colorado

County / Parish: Weld

Started: 11/02/2014 01:00 AM

API/UWI: 05-123-36984

Field: Wattenberg (Codell))

Well: Billings 3C-18H

Rig: Patterson UTI Drilling 326

Ended: 11/09/2014 12:00 PM

Gamma Ray
Section Plane: 90
Magnetic North: 8.55
Gamma Attenuation Factor: 4.218/2.753
Gamma Averaging: 90

Personnel

Day Hand: J. Minter

Night Hand: M. Liebergot

Comp. Emp: Mike Quintana

Maximum Temperature: 230 °f

Location

Latitude: 40.222676

Longitude: -105.051741

Elev. GL: 5155

Elev. DF:

Elev. KB: 5187

Log and Survey Depths Relative to Kelly Bushing (KB) Depth

Hole Data

Size	From	To
12-1/4	0	880
8-3/4	880	7550
6-1/8	7550	14025

Casing Data

Size	From	To
9-5/8	0	880
7	0	7550
5	0	14025

Bit Sizes

Size	From	To
12-1/4	0	880
8-3/4	880	7550
6.125	7550	14025

Mud Data

Type	Weight	Density	Viscosity	Rm	Rmf	Rmc	From	To
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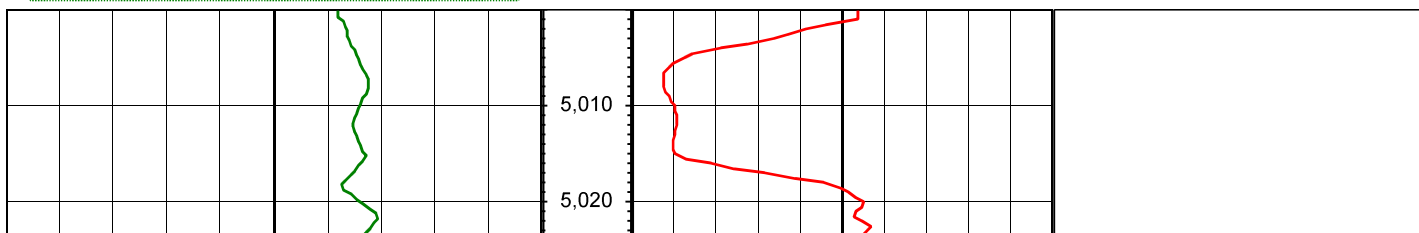
Tool Run Data

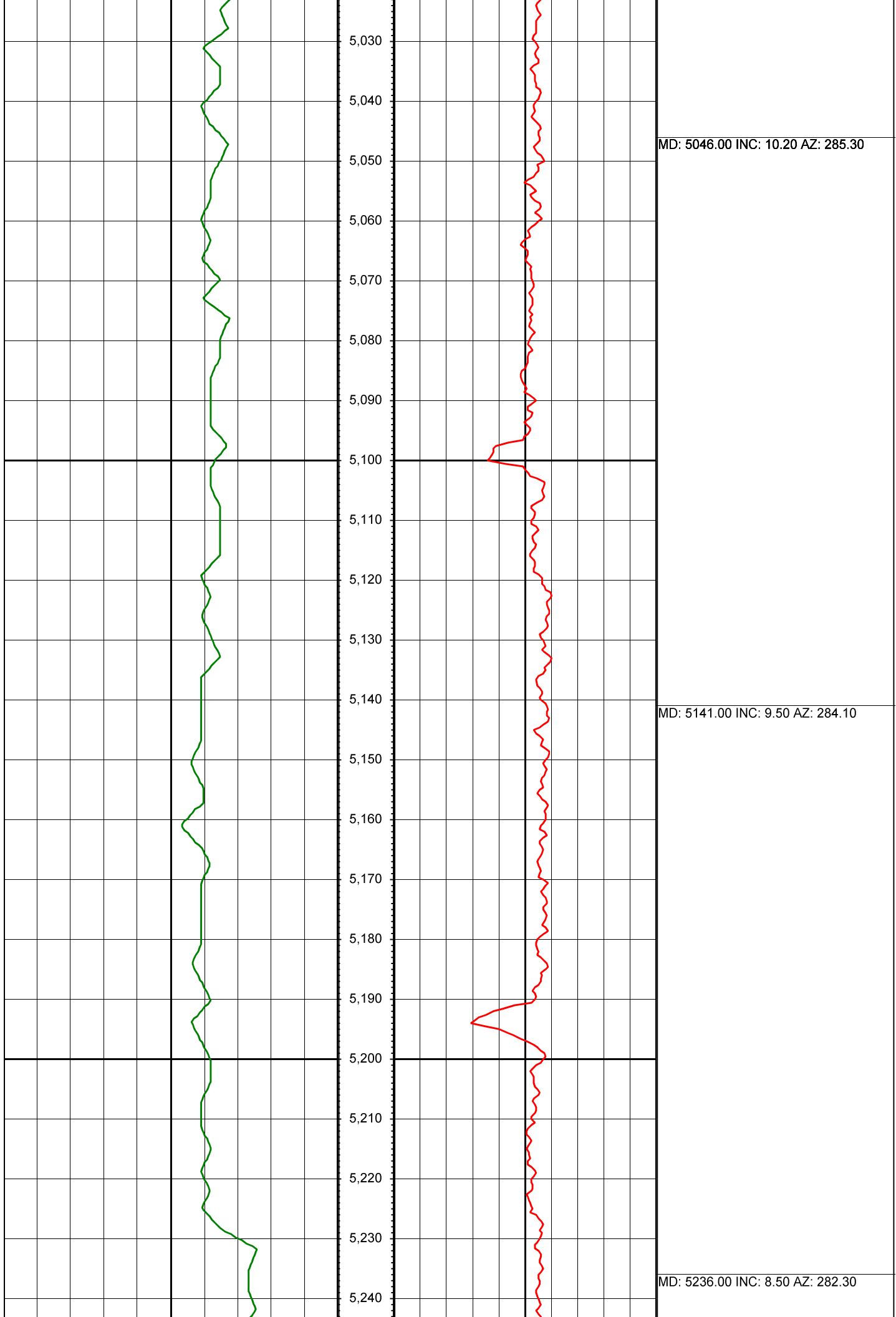
Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
232	36.78	0	11/3/2014 1:30:17 PM	880	11/5/2014 8:30:17 PM	7555
199	40.42	0	11/6/2014 12:00:11 AM	7555	11/7/2014 10:00:11 AM	14025

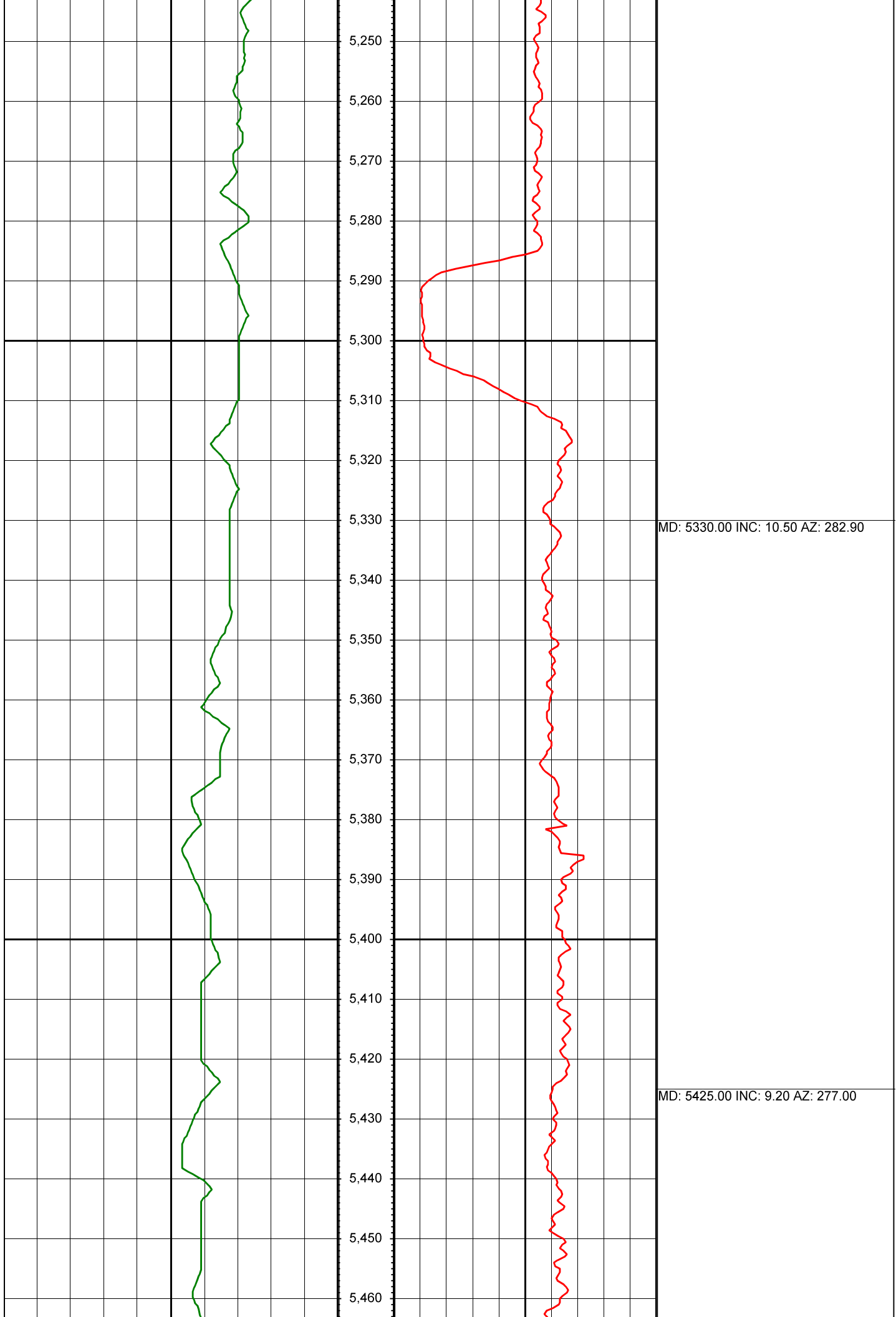
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.

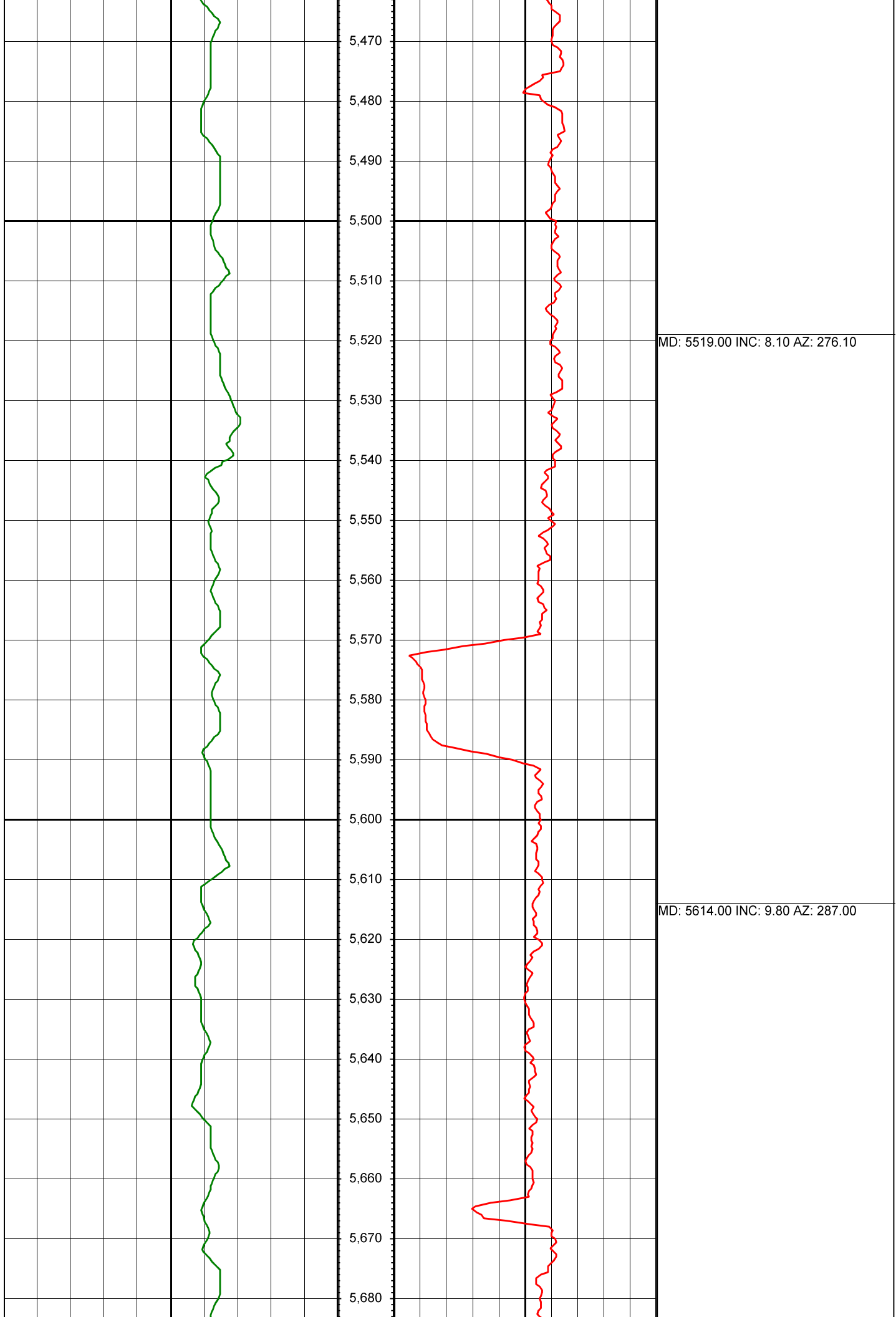
0.00 Gamma Ray (API) 150.00 MD 0.00 ROP (FT/HR) 600.00 Surveys (MD/INC/AZ)

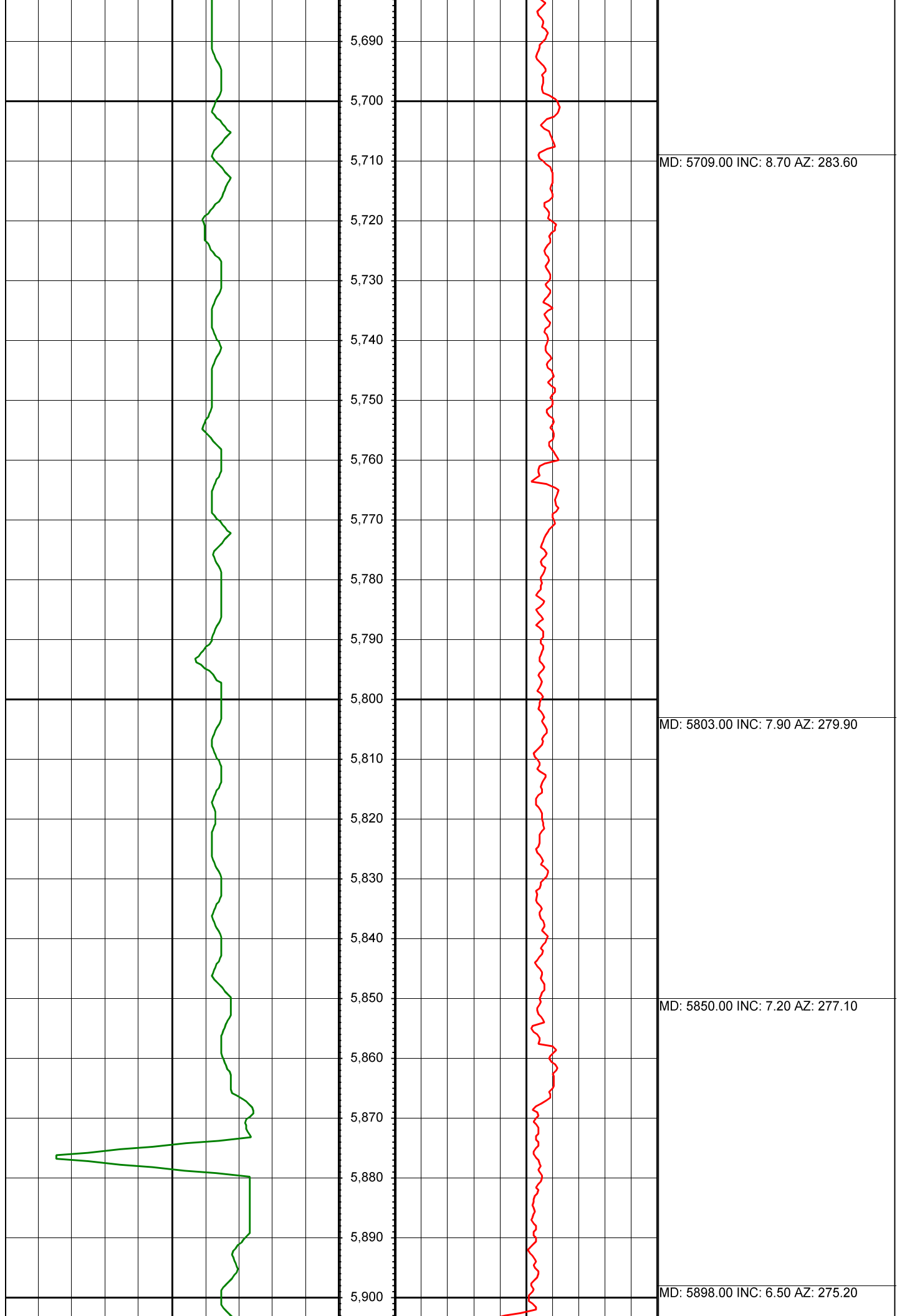
150.00 2 300.00 FT

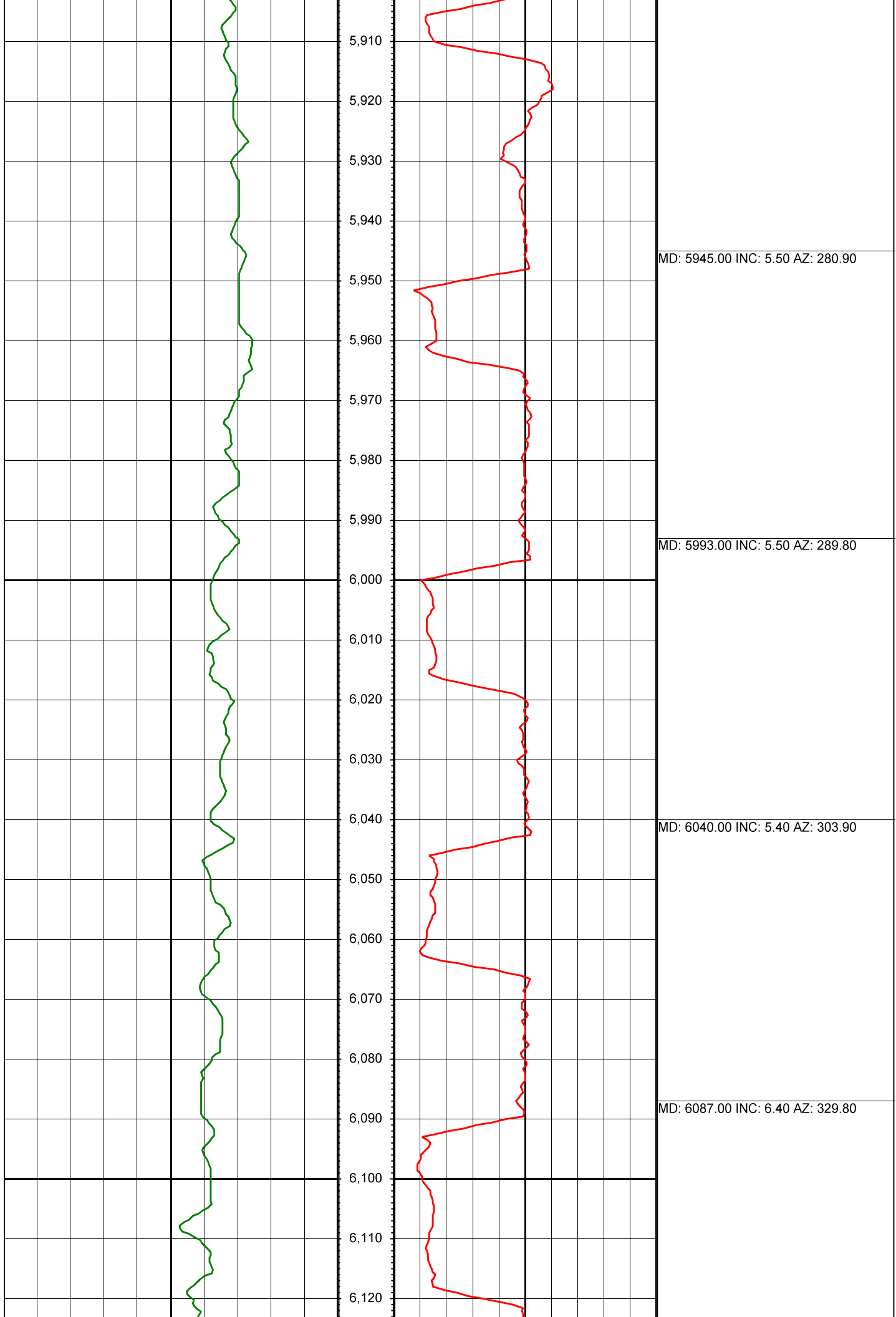


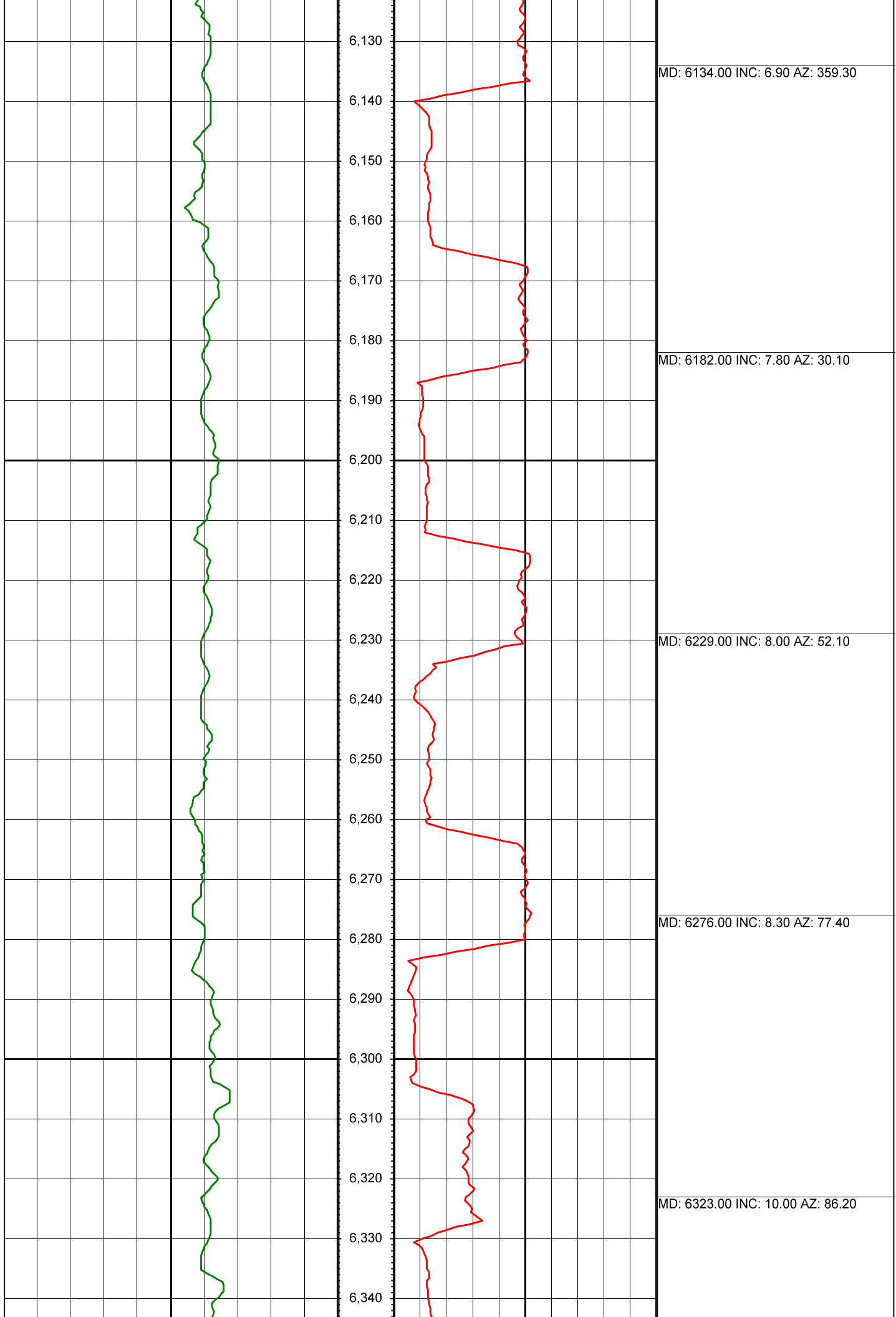


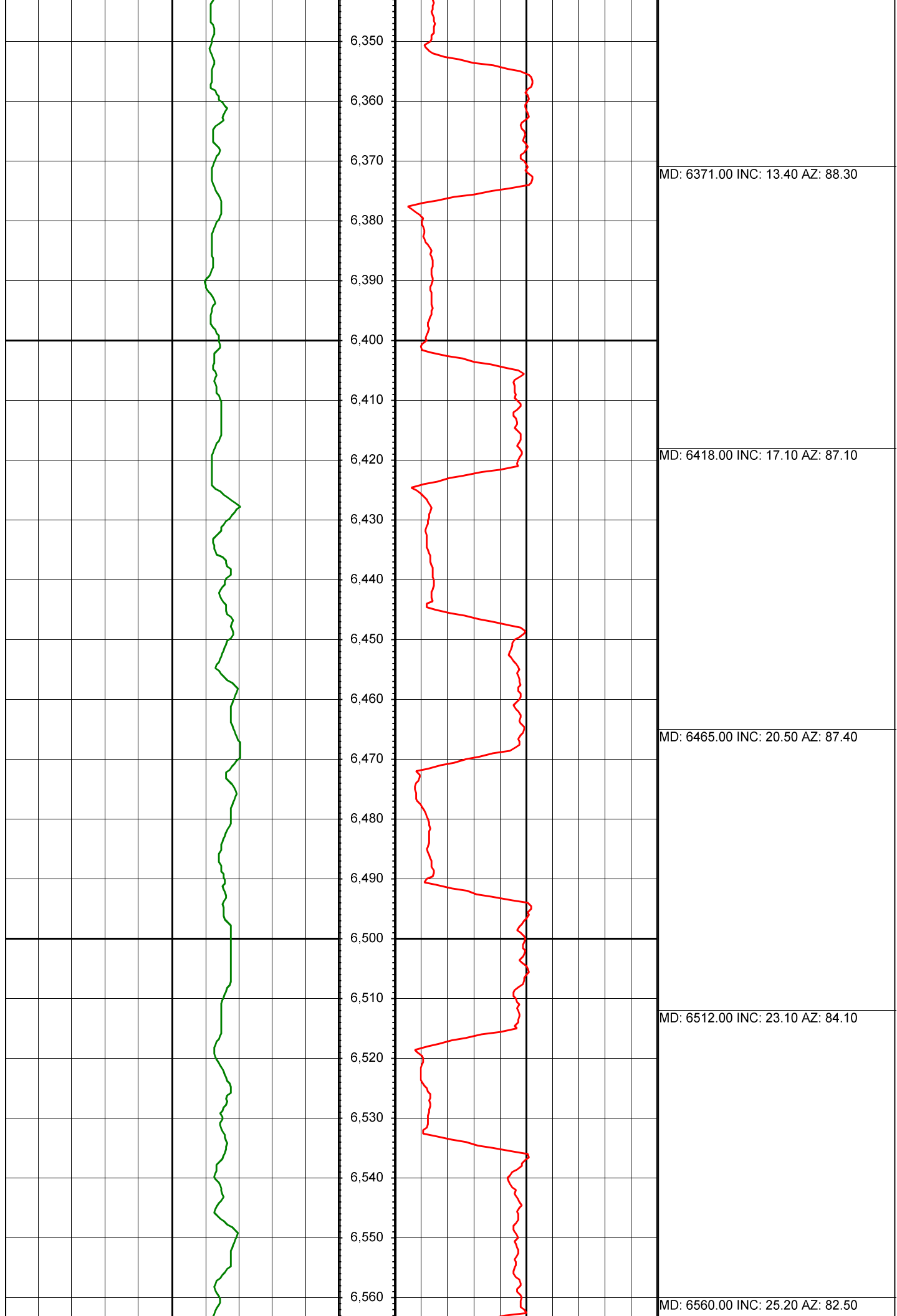


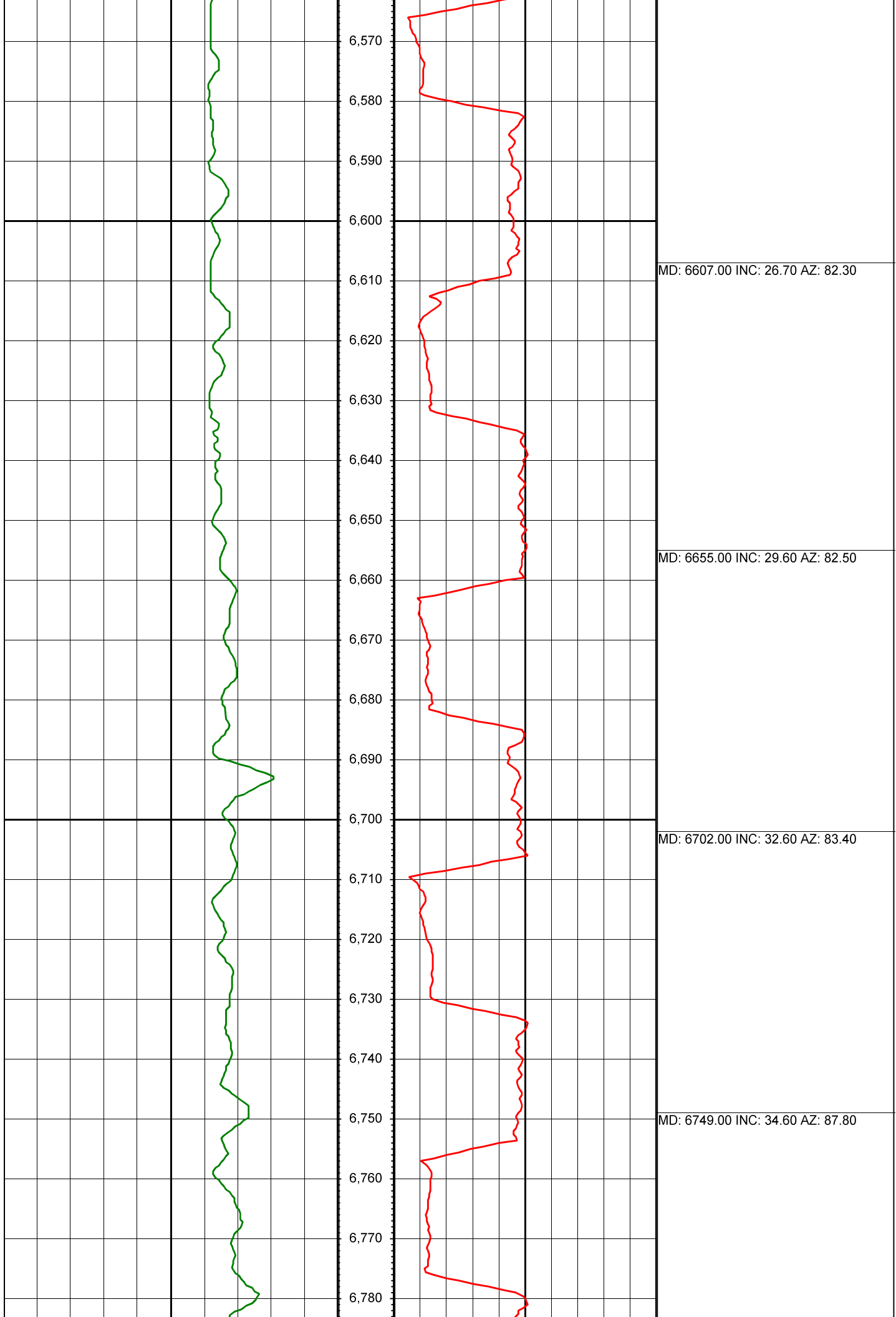


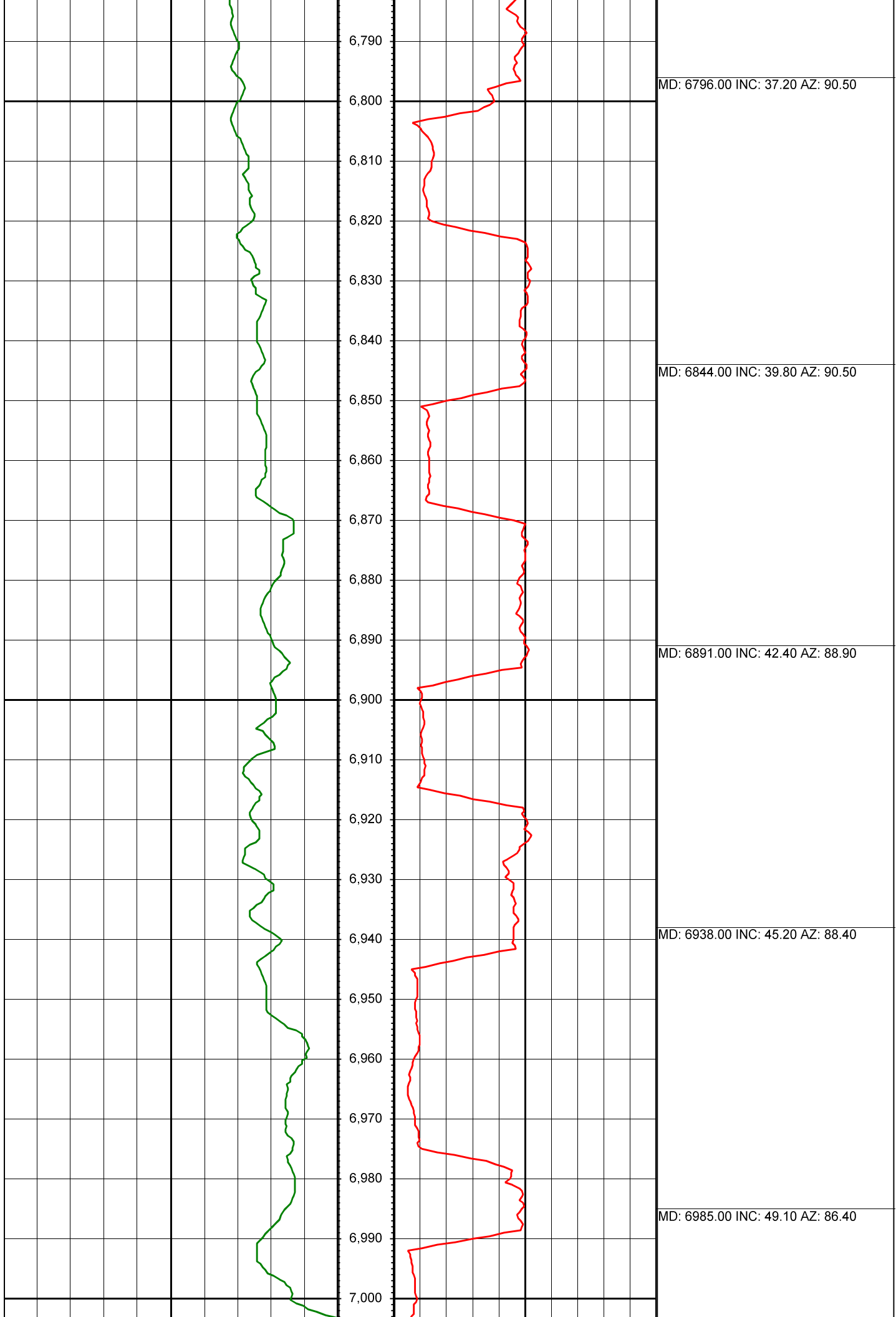


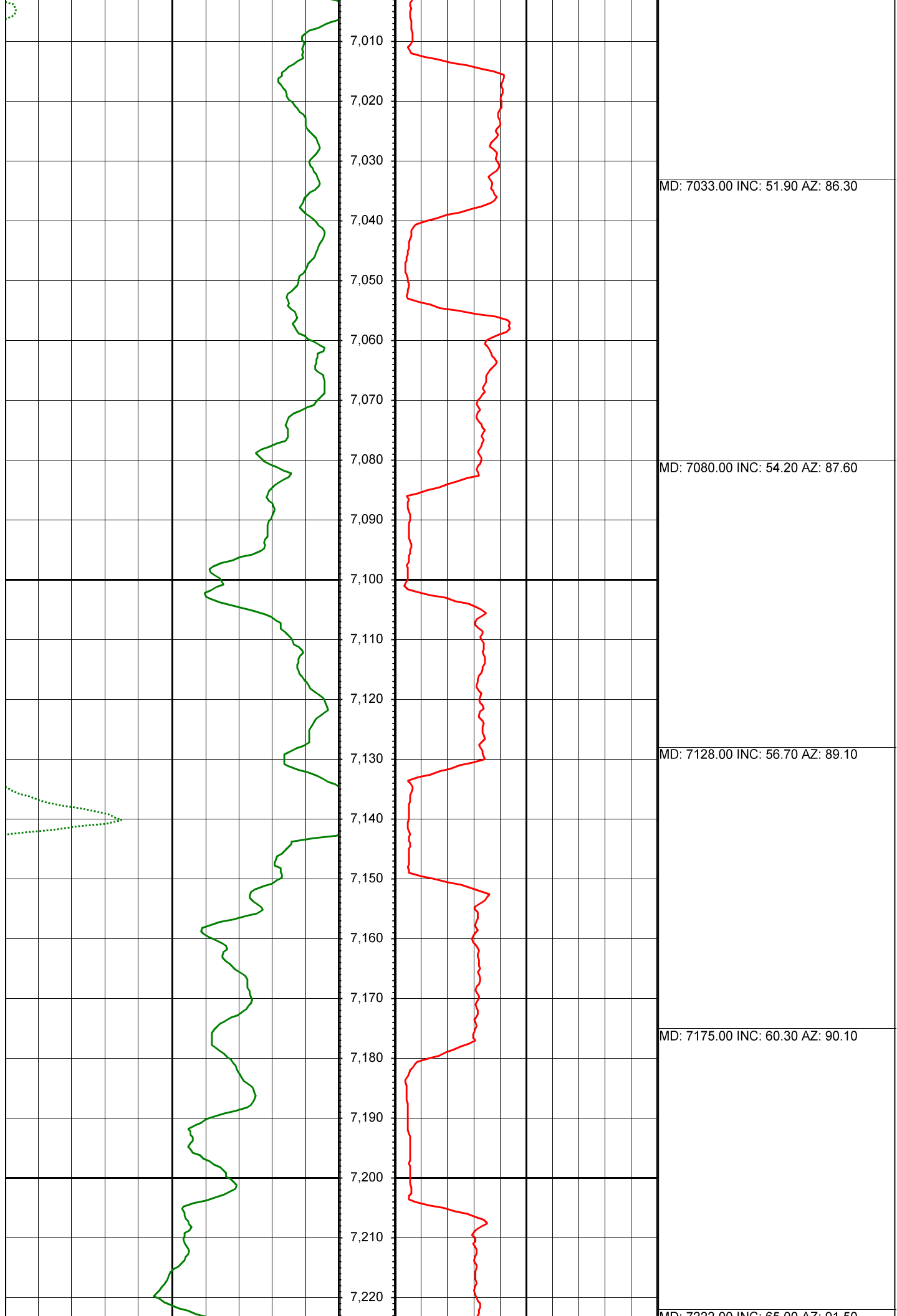


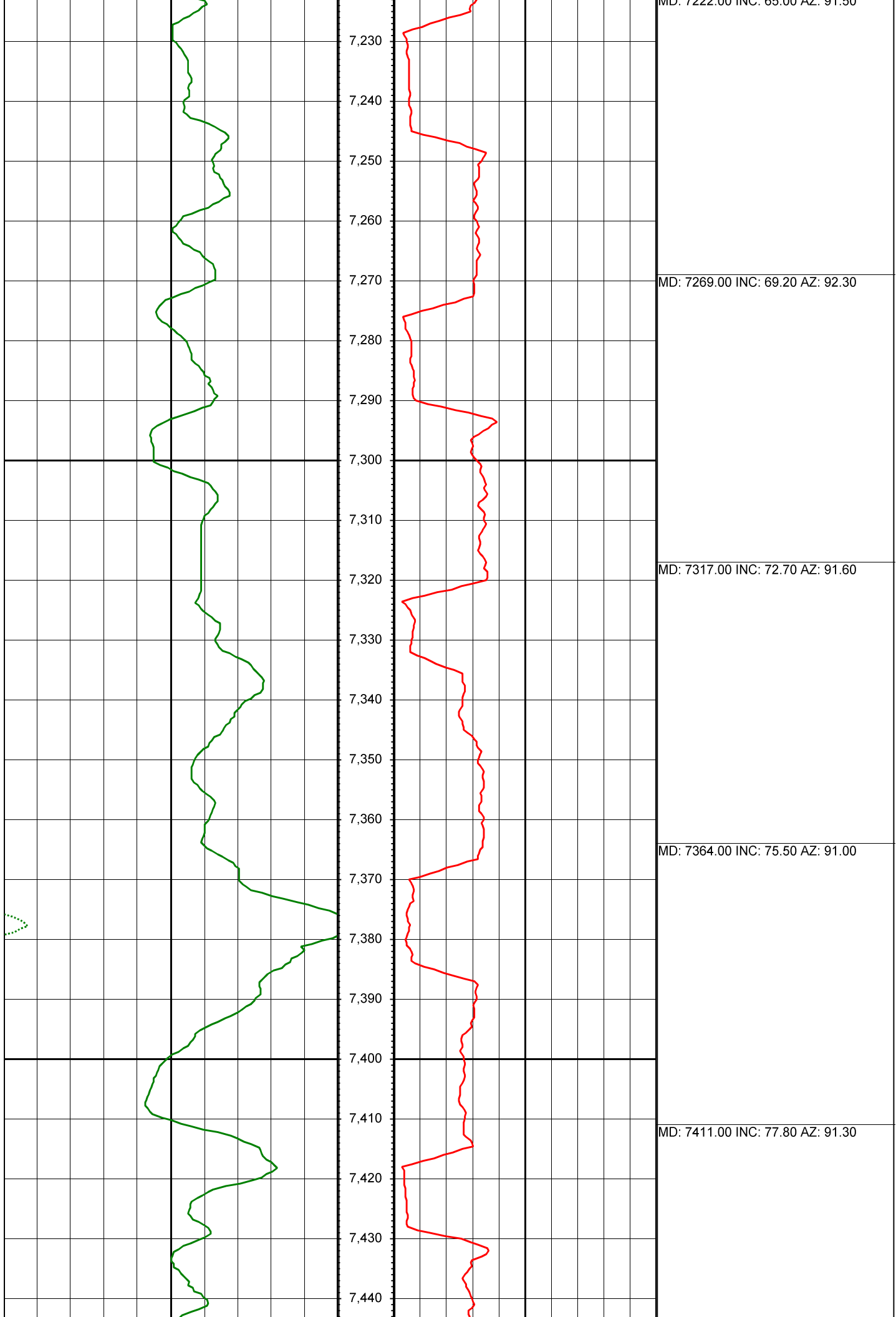


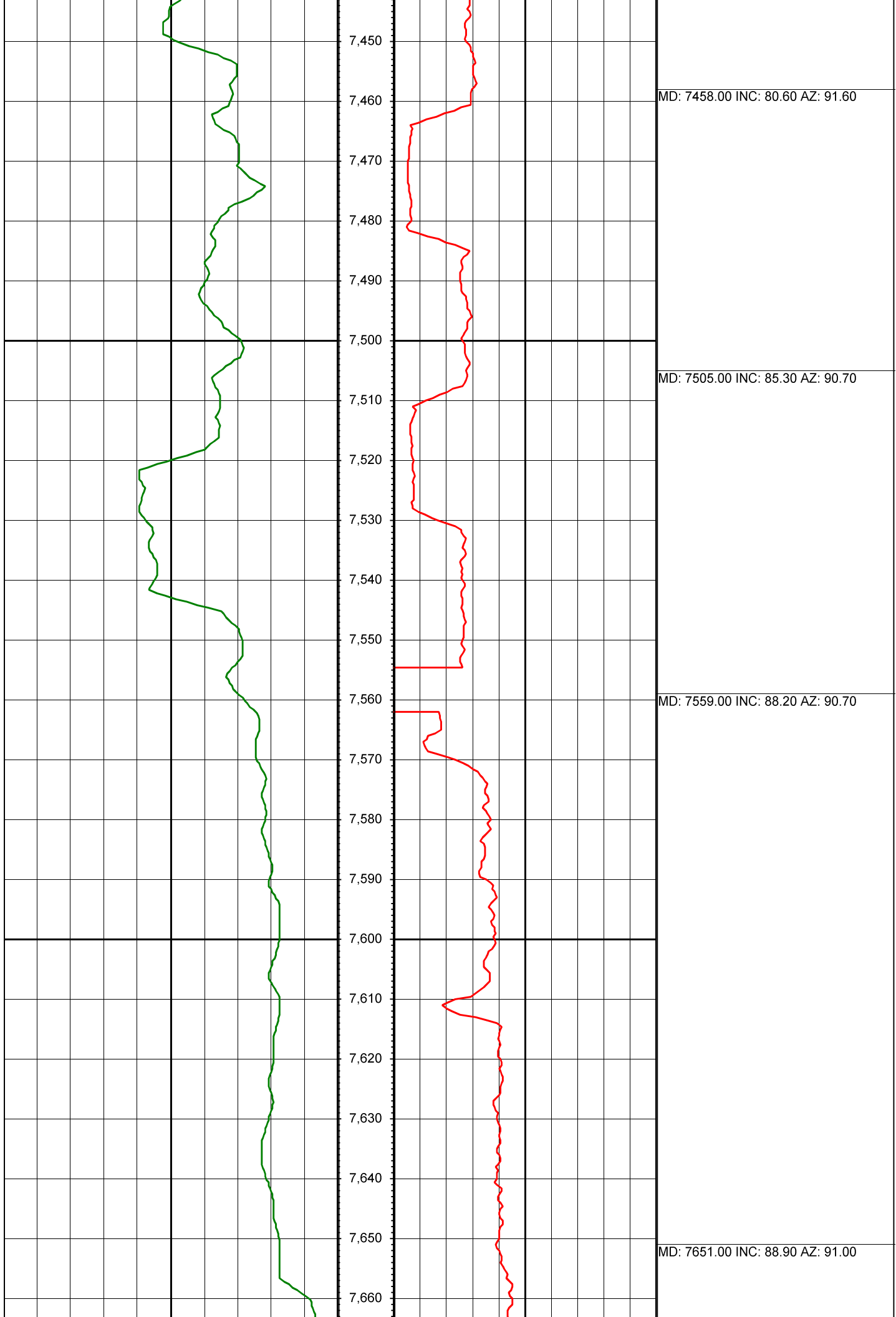


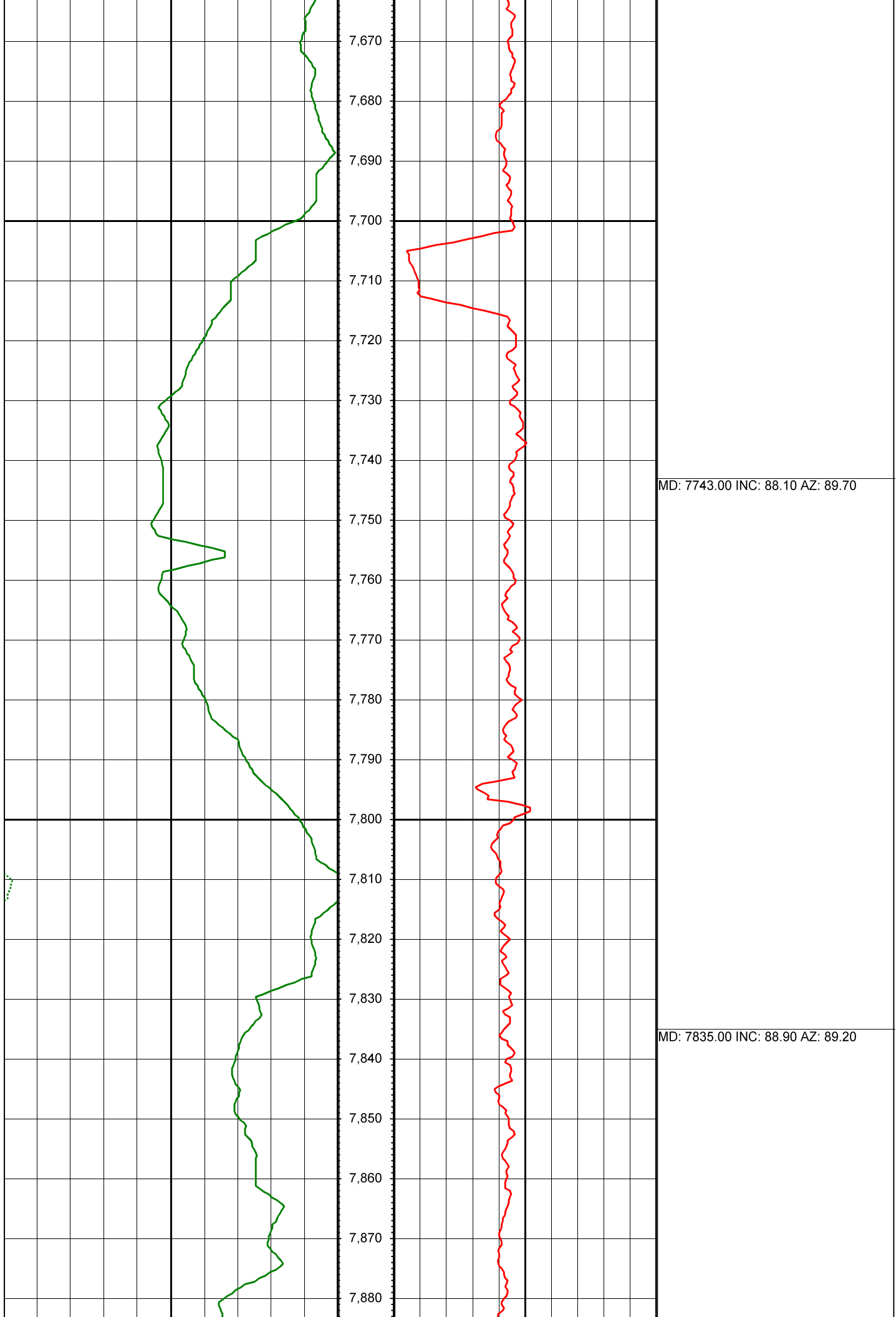


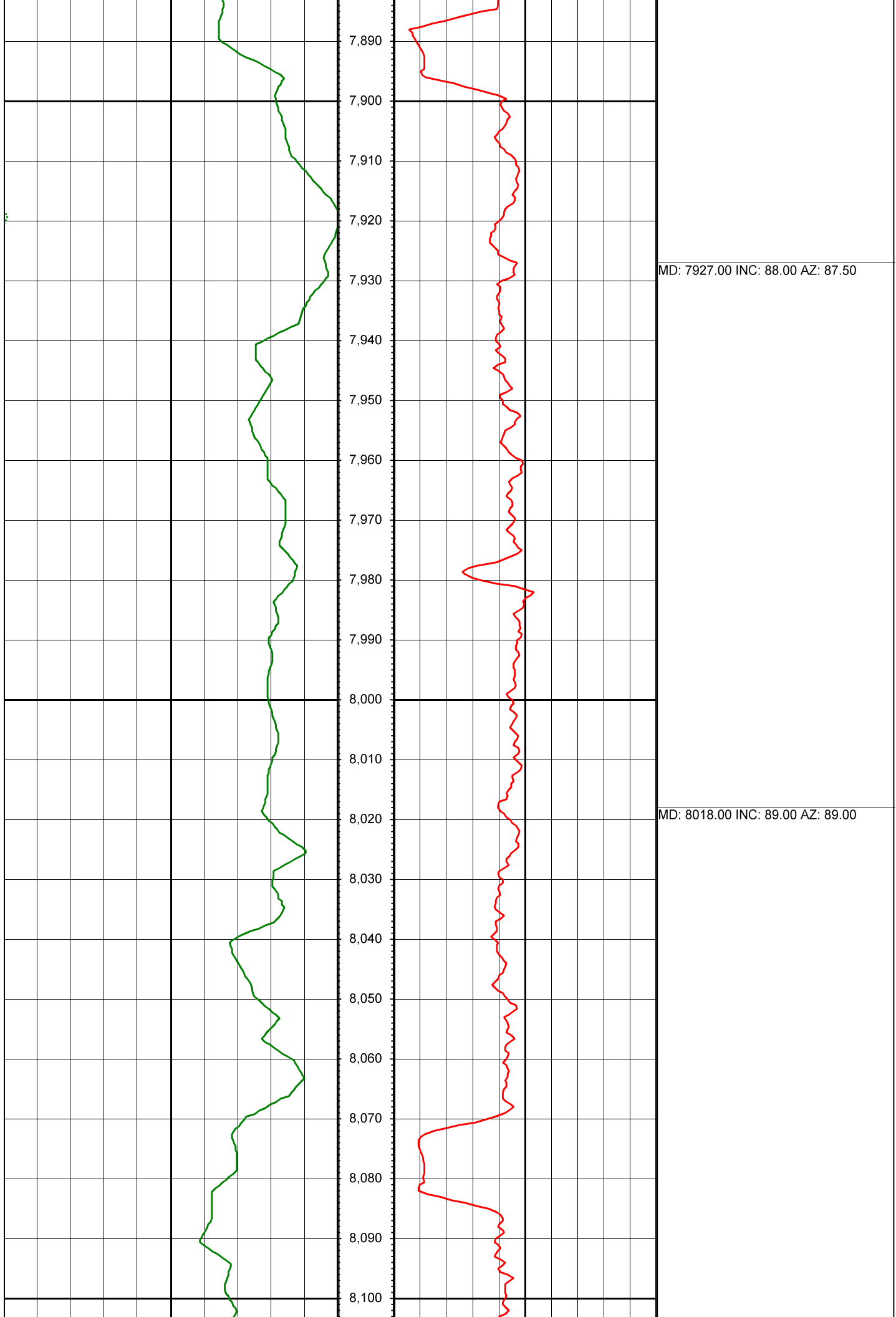


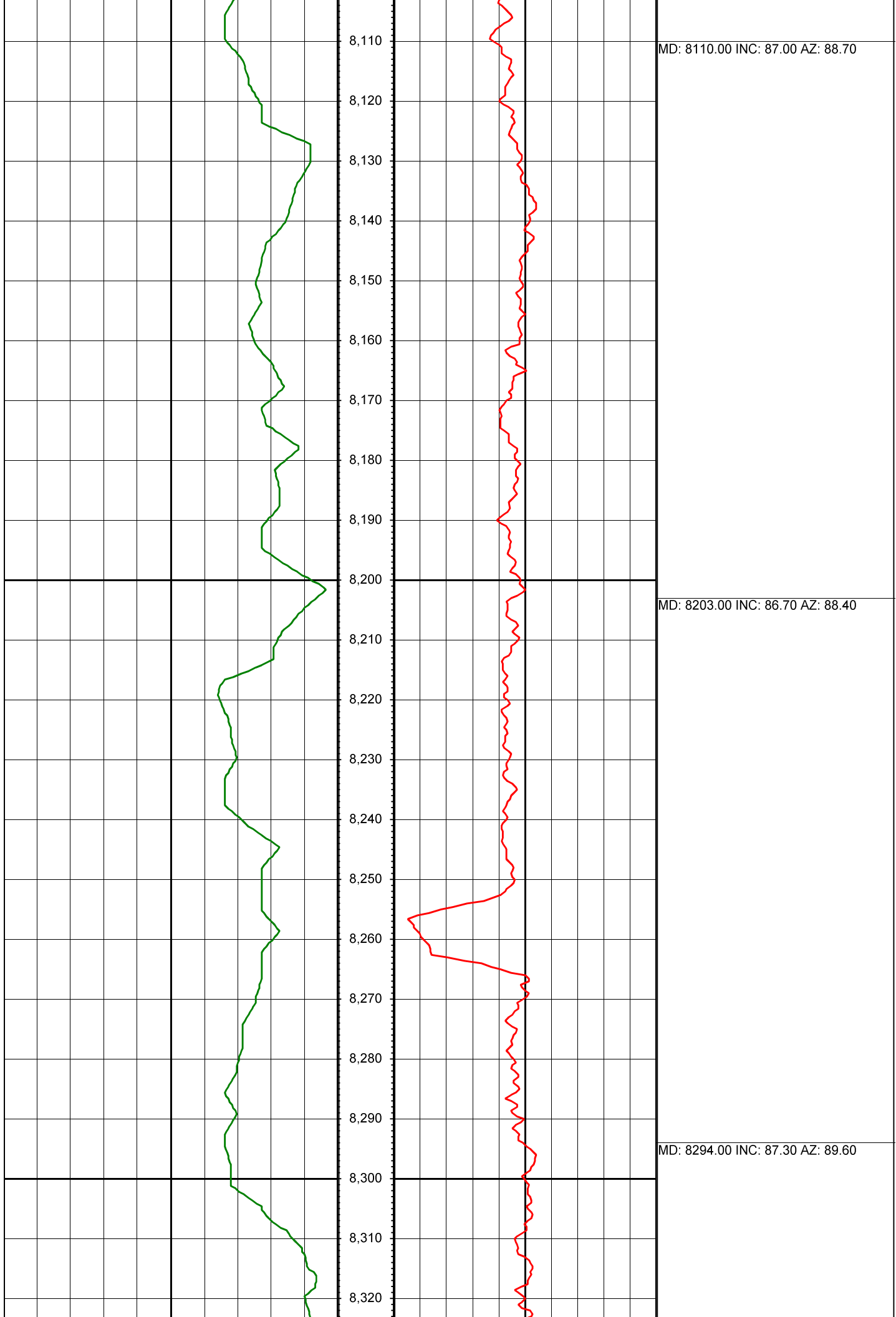


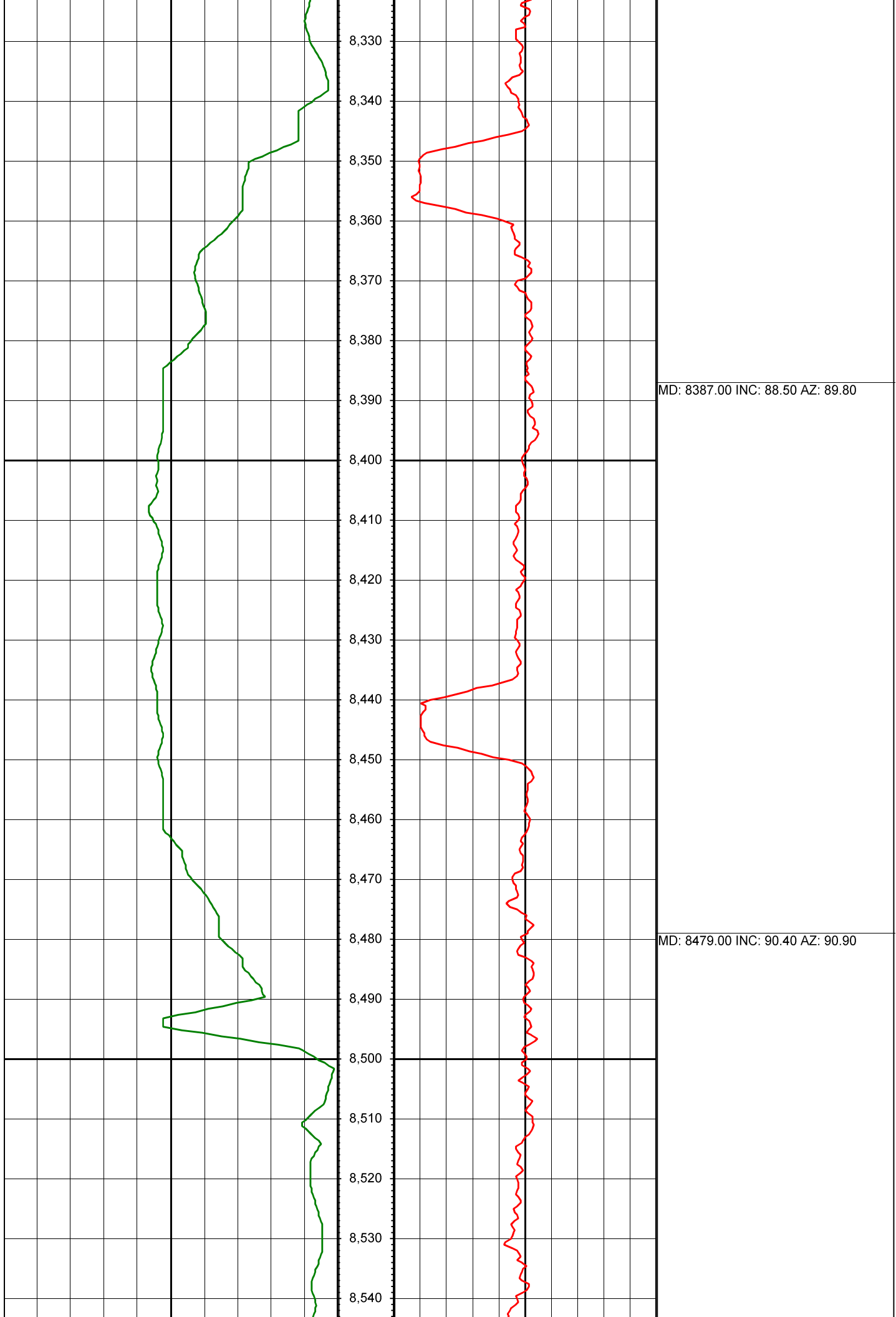


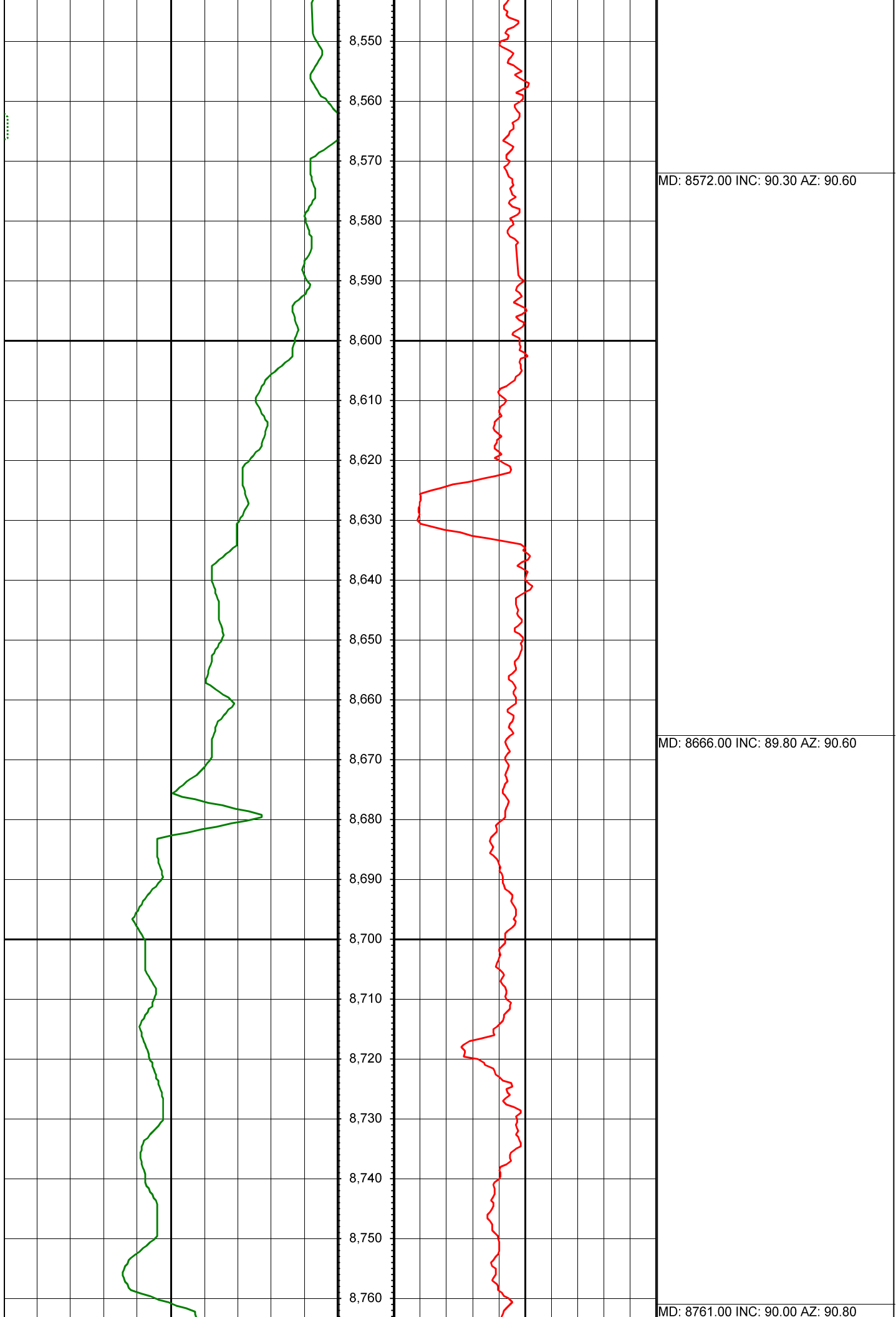


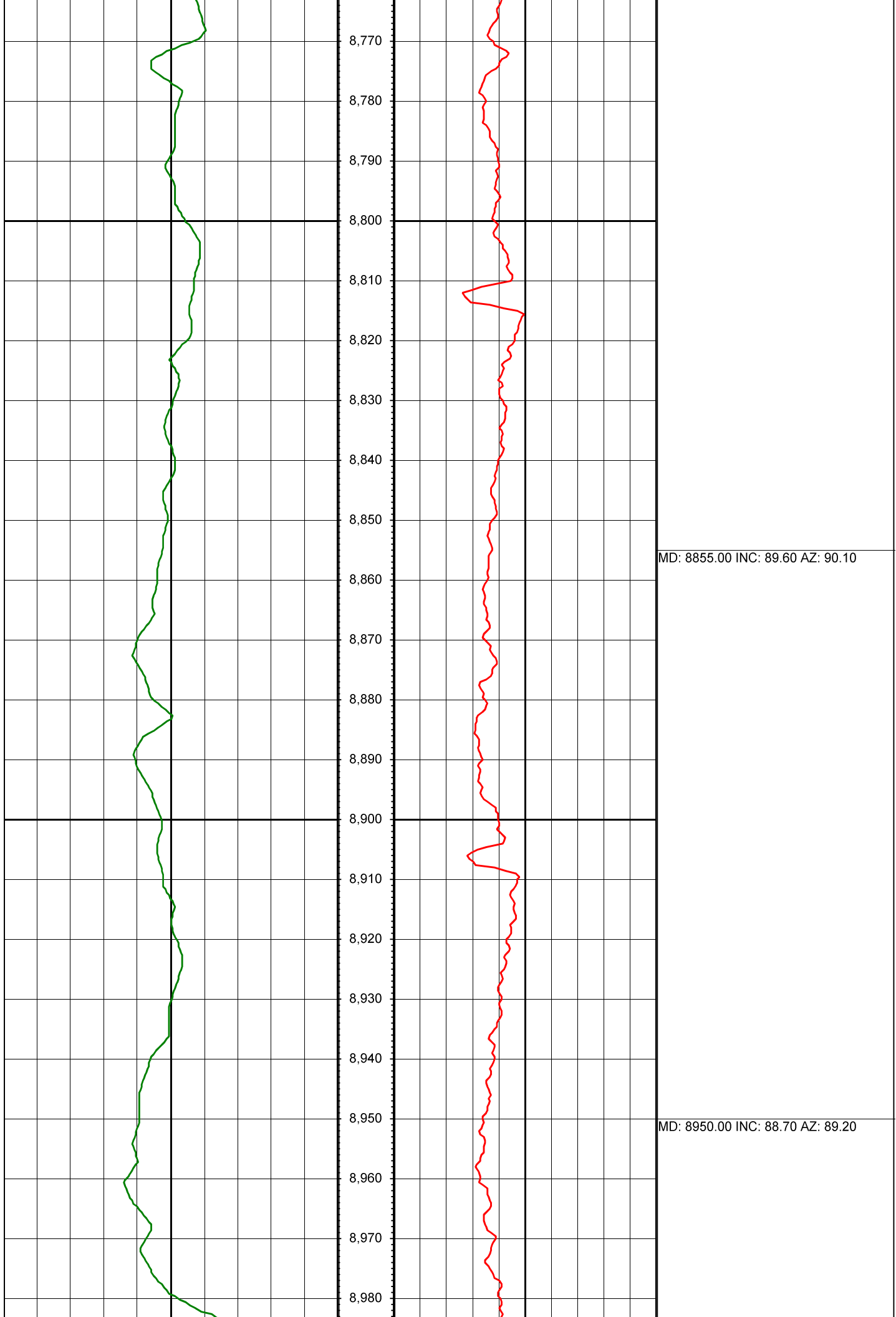


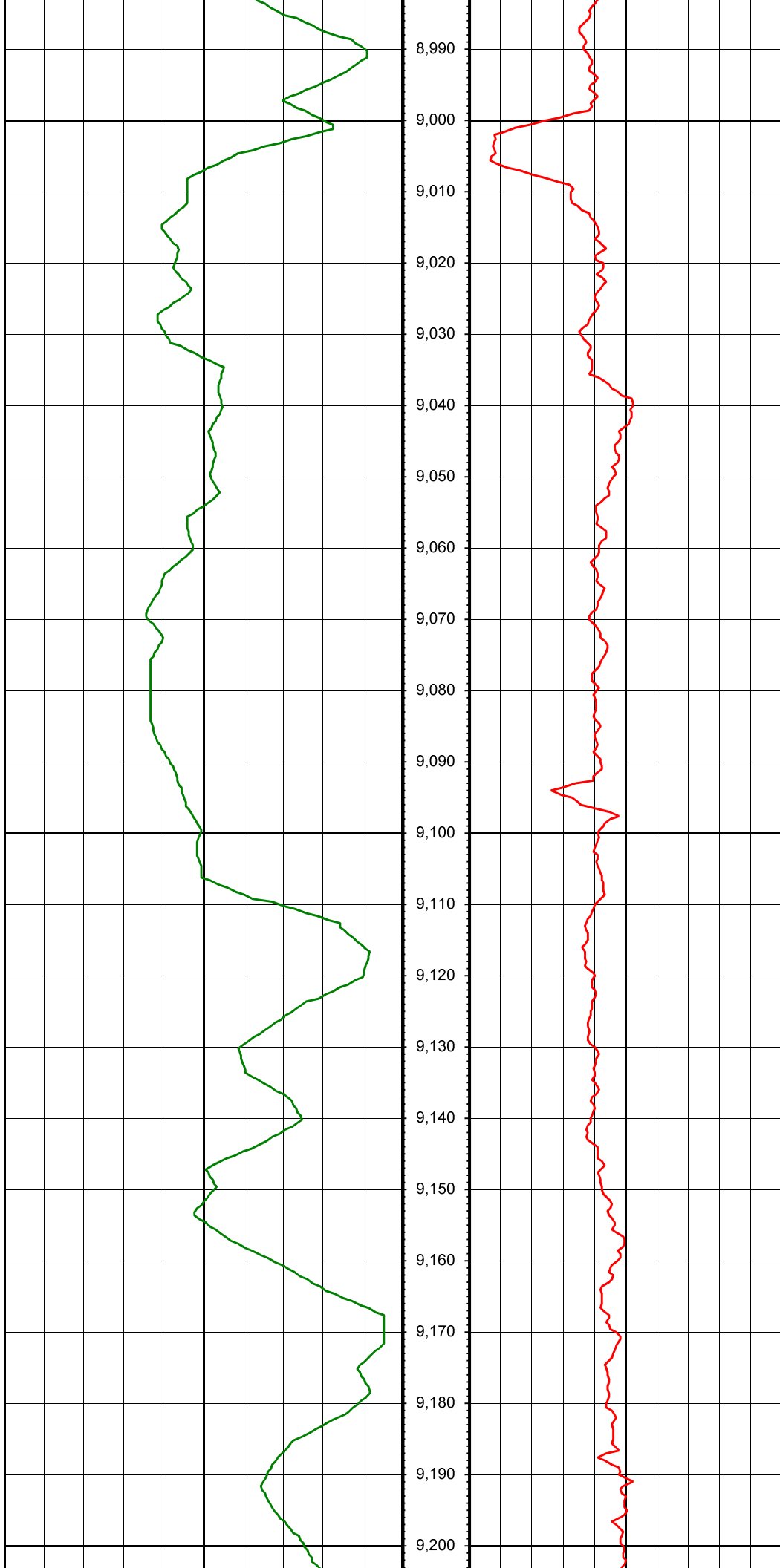






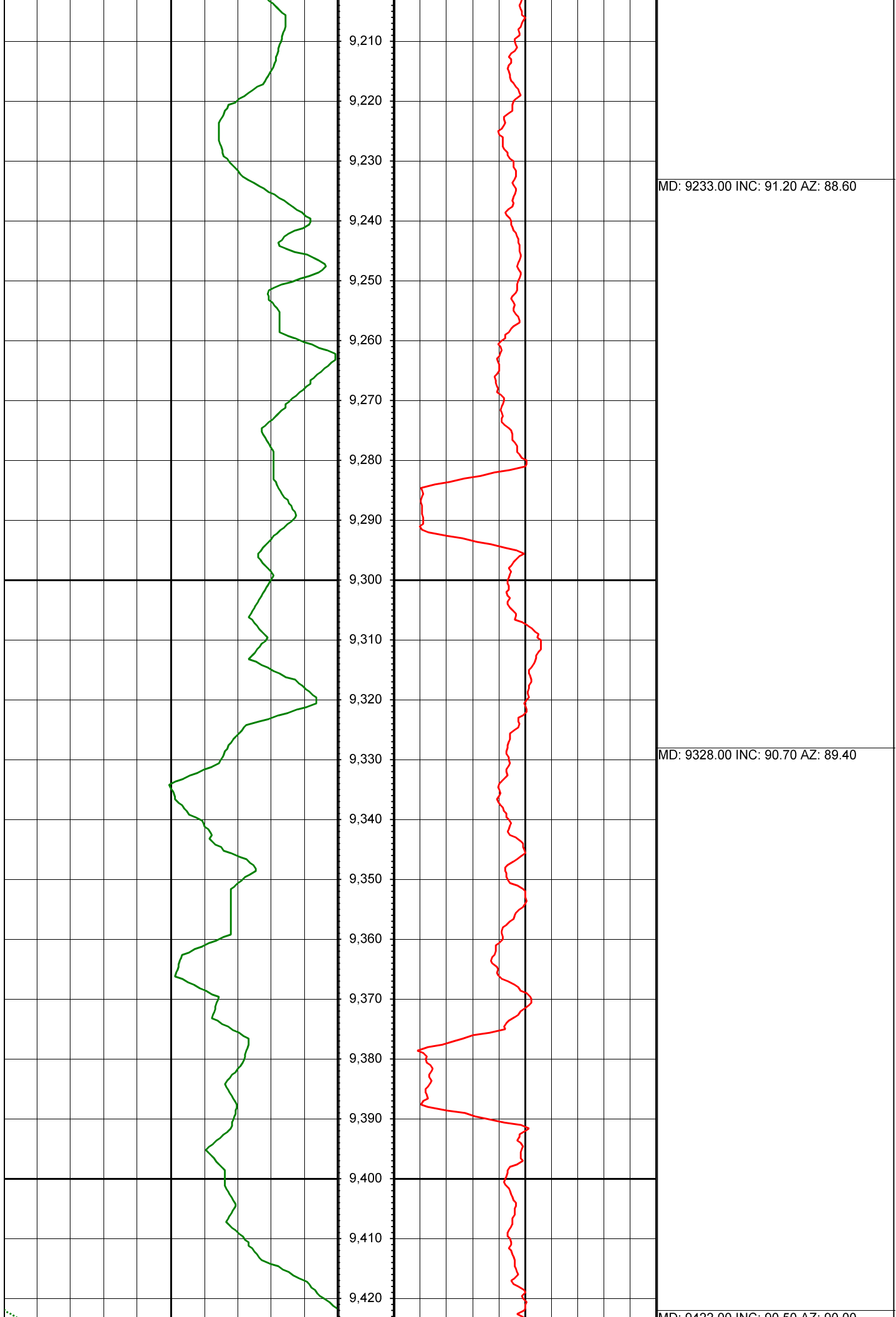


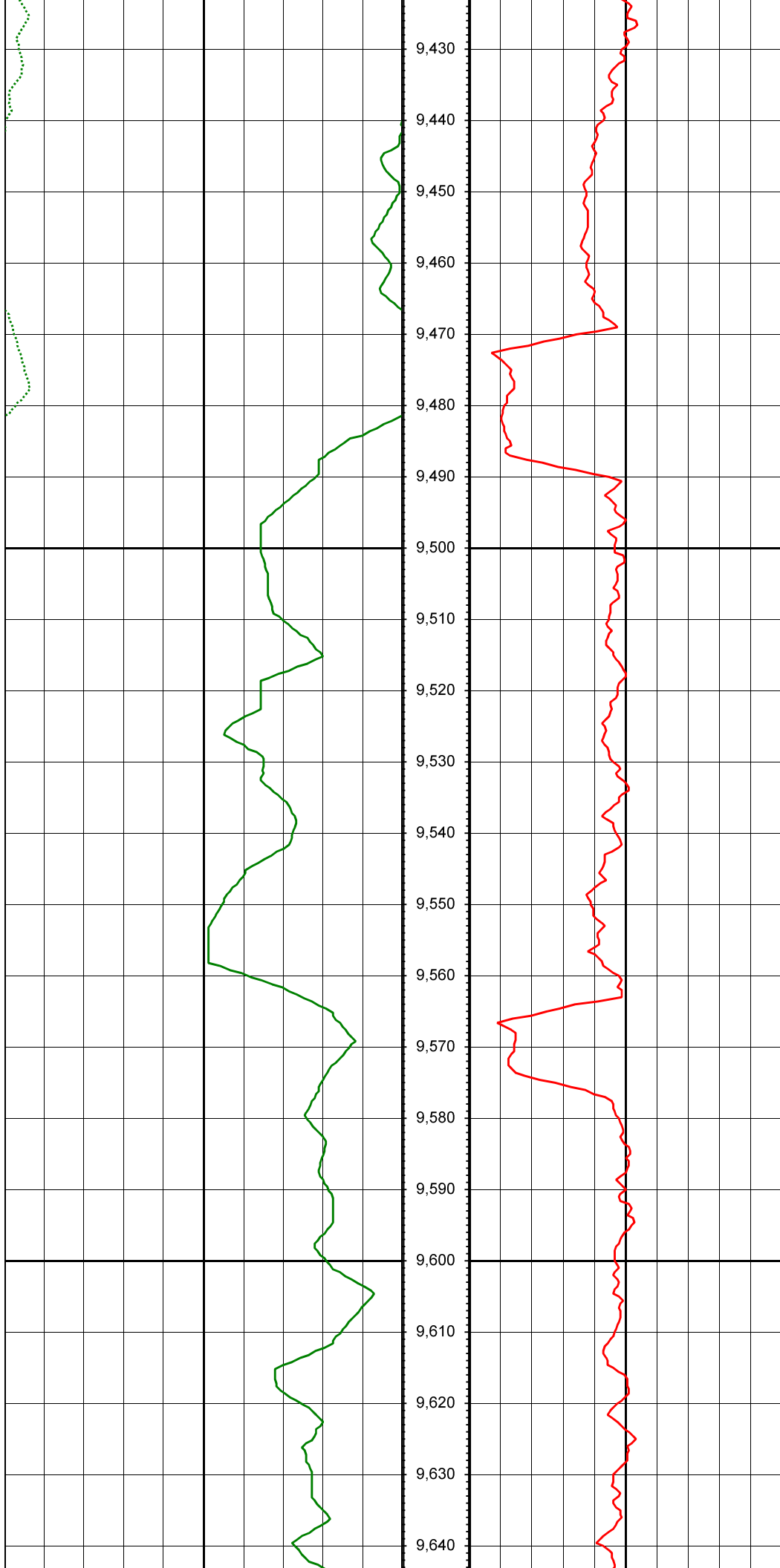




MD: 9044.00 INC: 89.90 AZ: 89.00

MD: 9139.00 INC: 90.30 AZ: 89.10

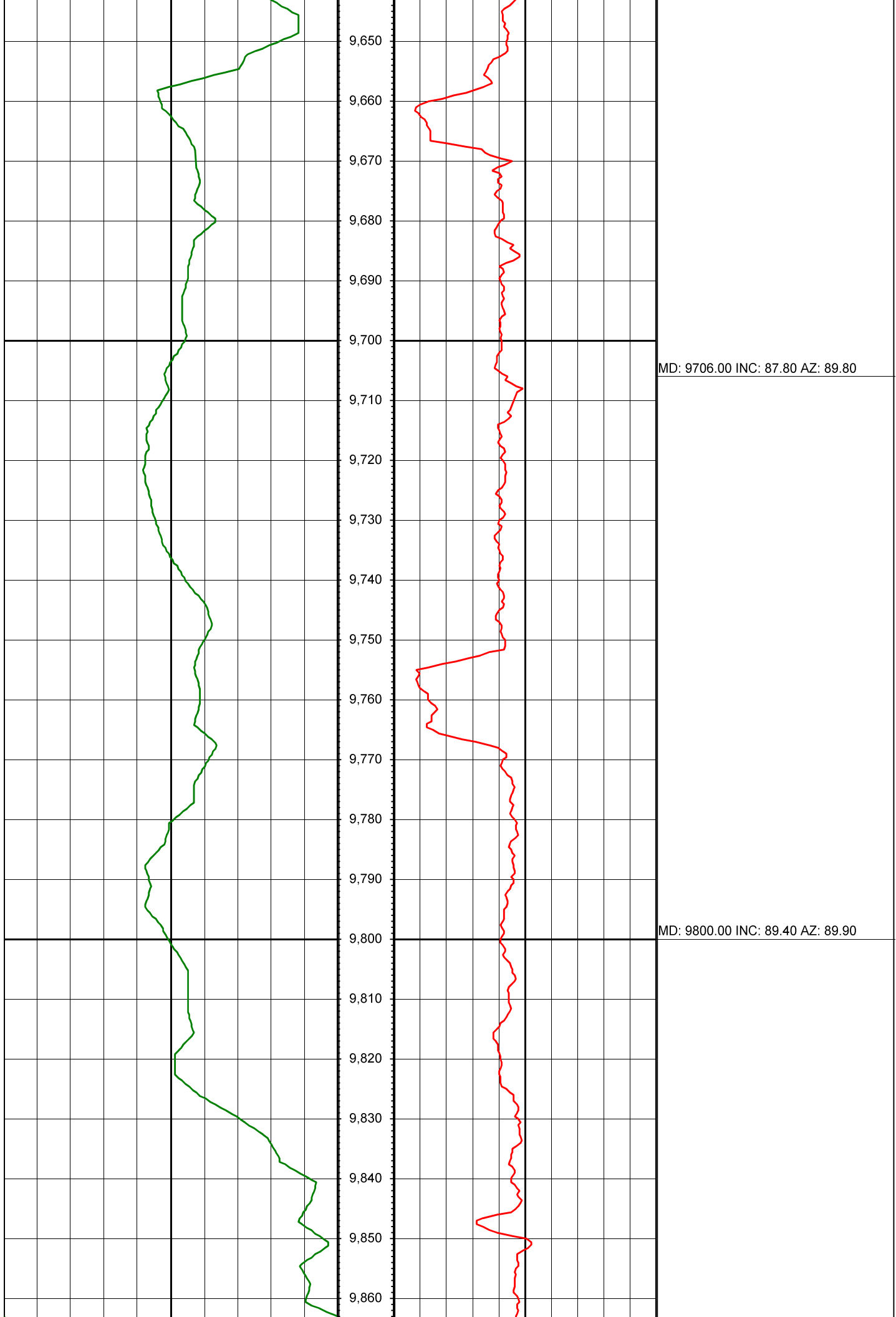


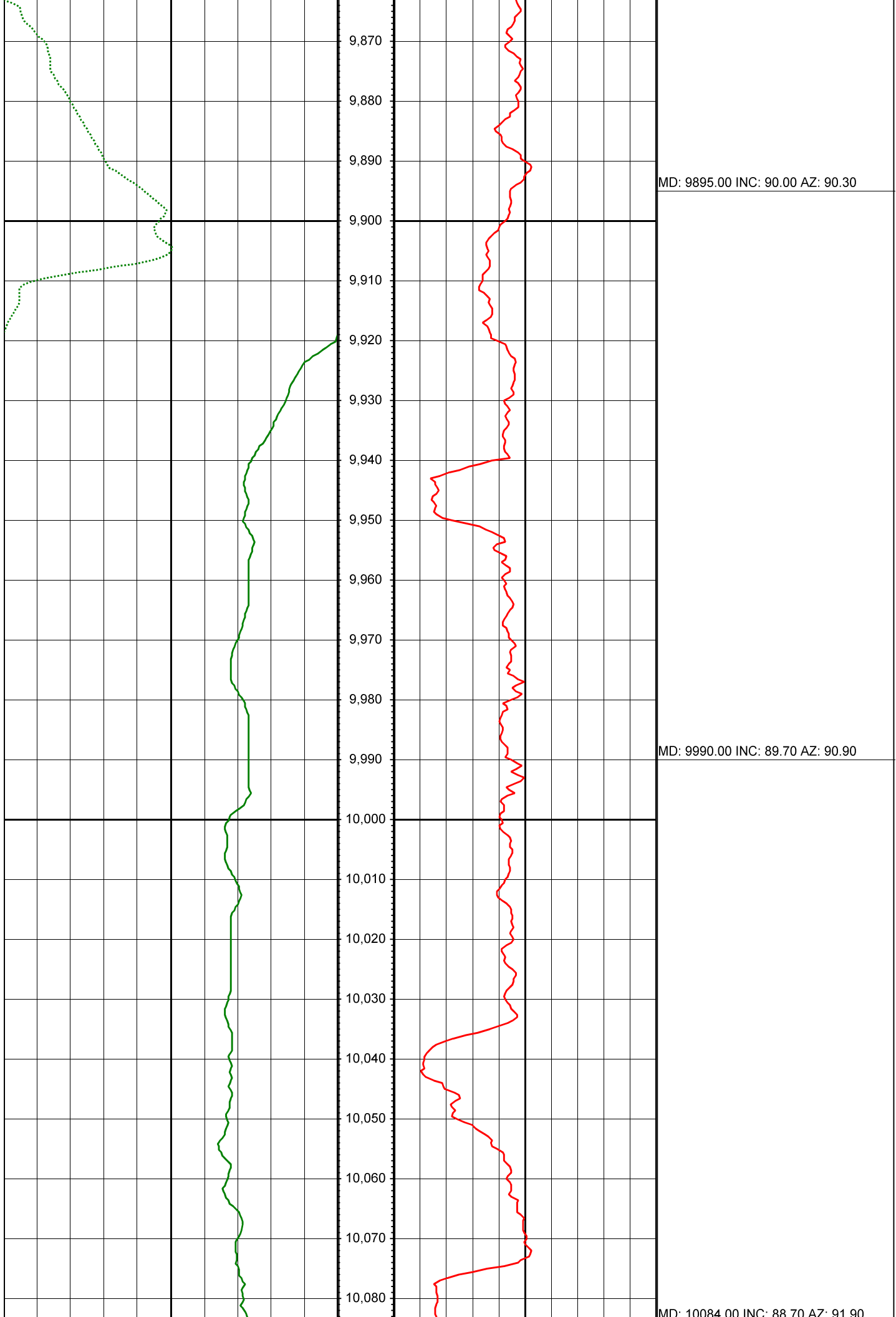


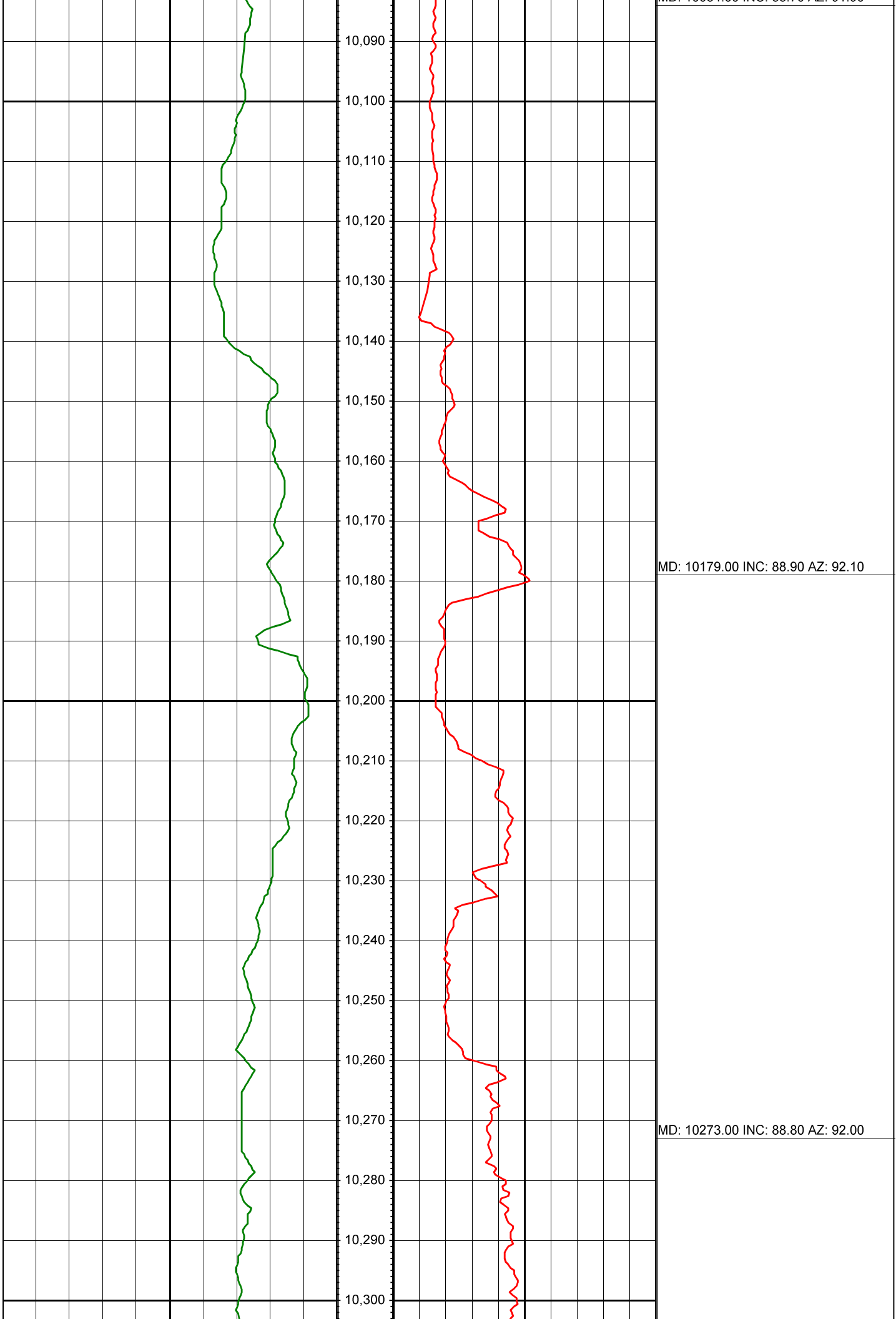
MD: 9422.00 INC: 90.30 AZ: 90.00

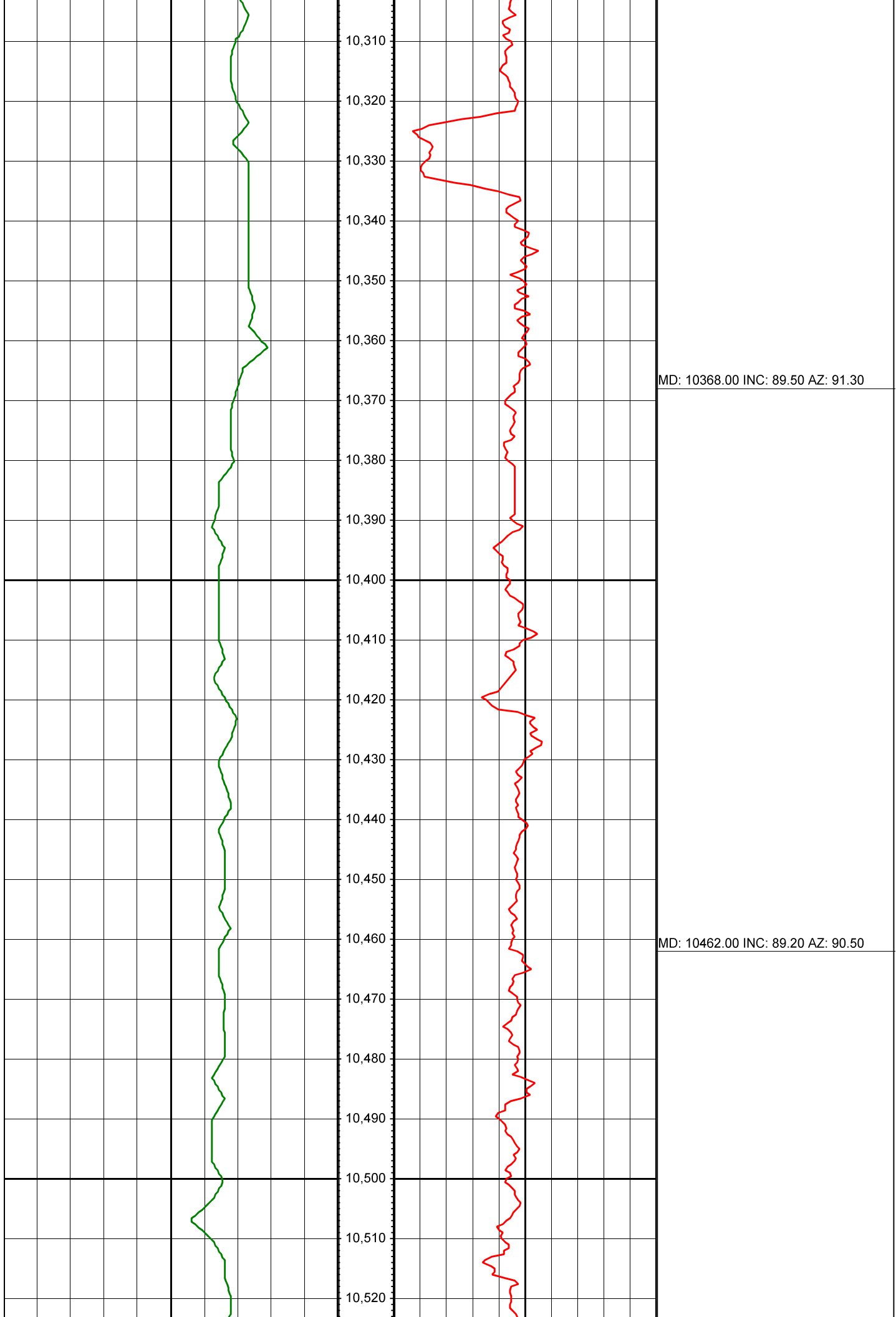
MD: 9517.00 INC: 86.60 AZ: 89.40

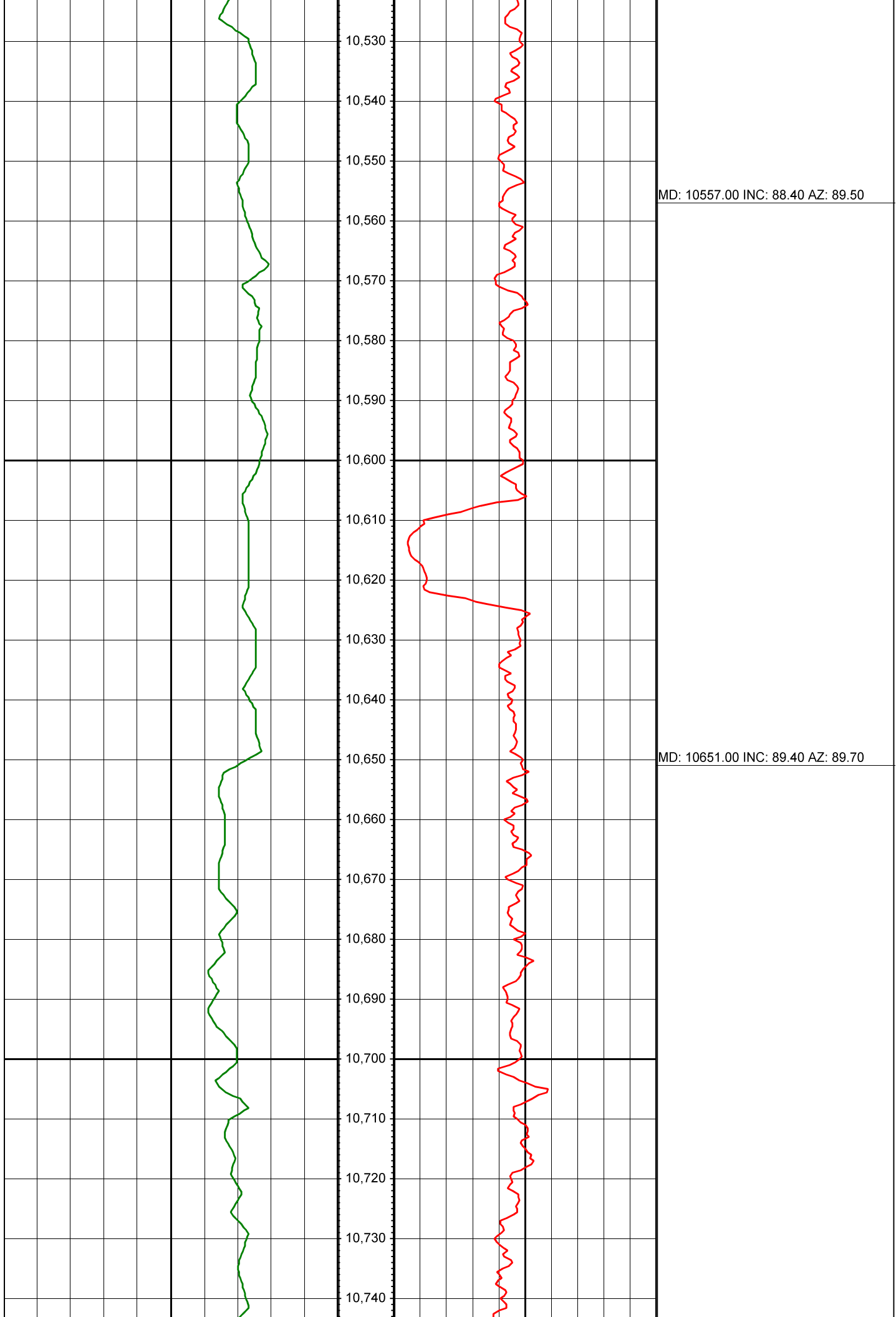
MD: 9611.00 INC: 87.70 AZ: 89.10

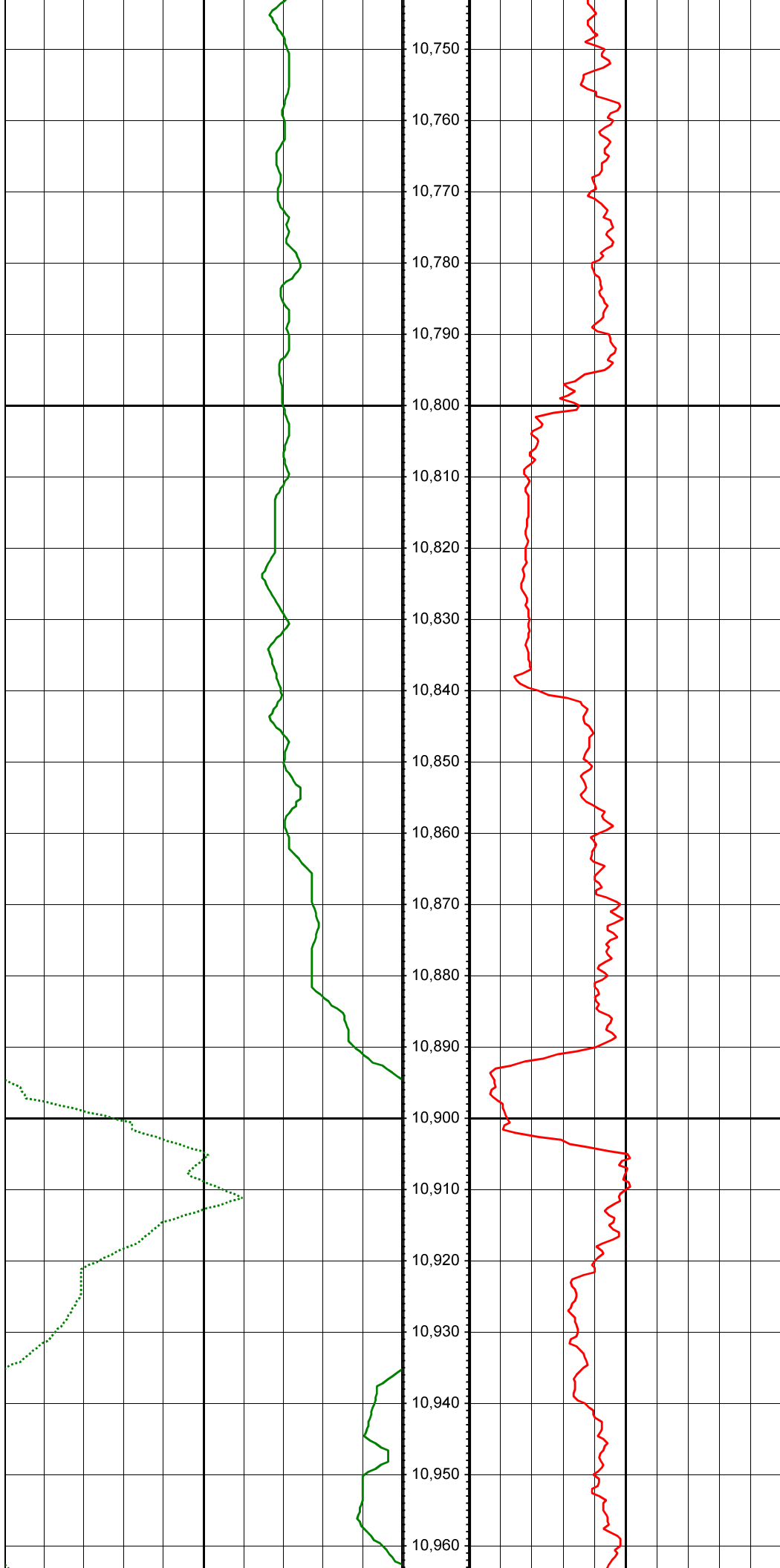








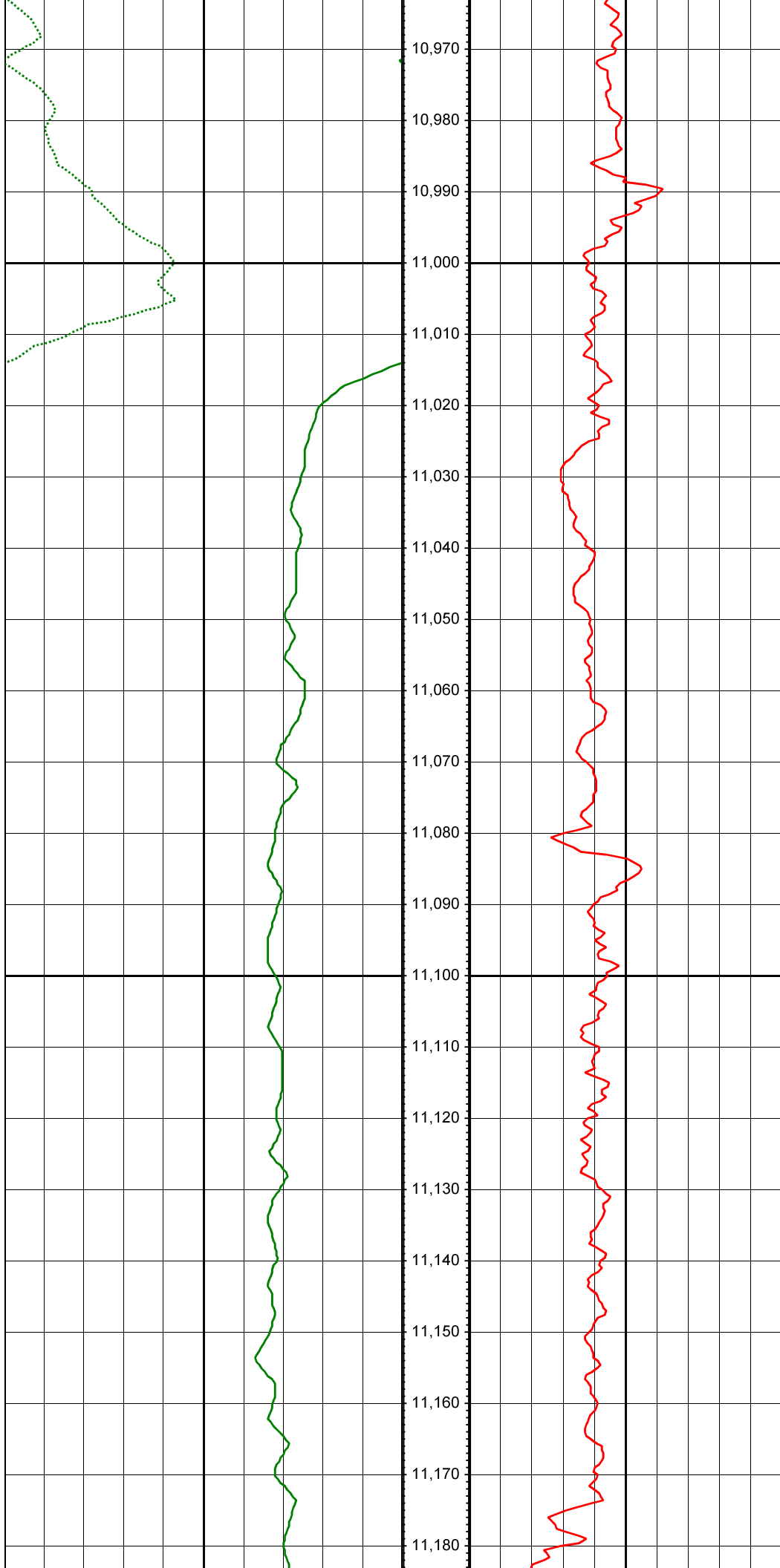




MD: 10746.00 INC: 89.40 AZ: 90.30

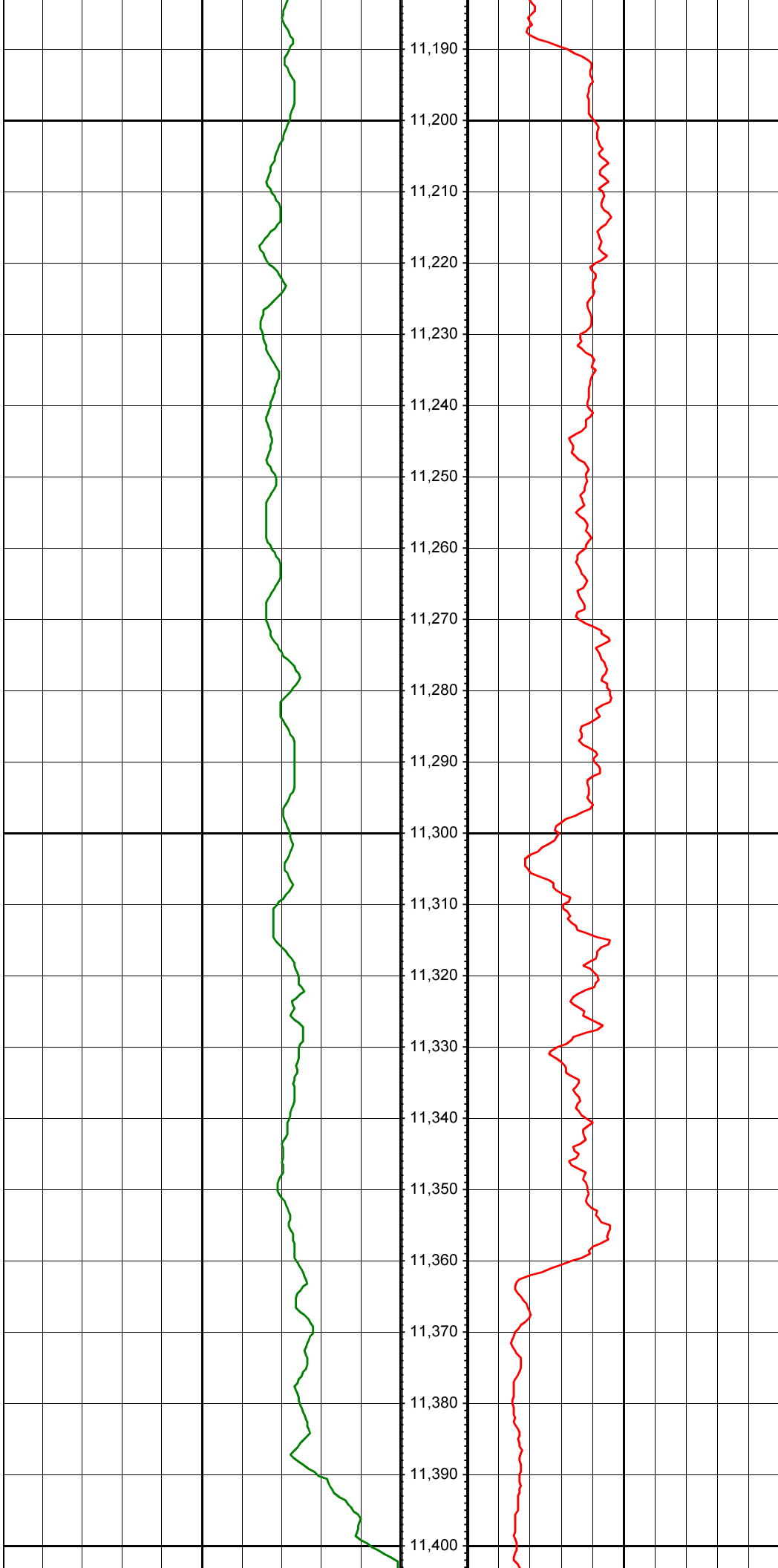
MD: 10840.00 INC: 88.90 AZ: 90.20

MD: 10935.00 INC: 89.50 AZ: 89.80



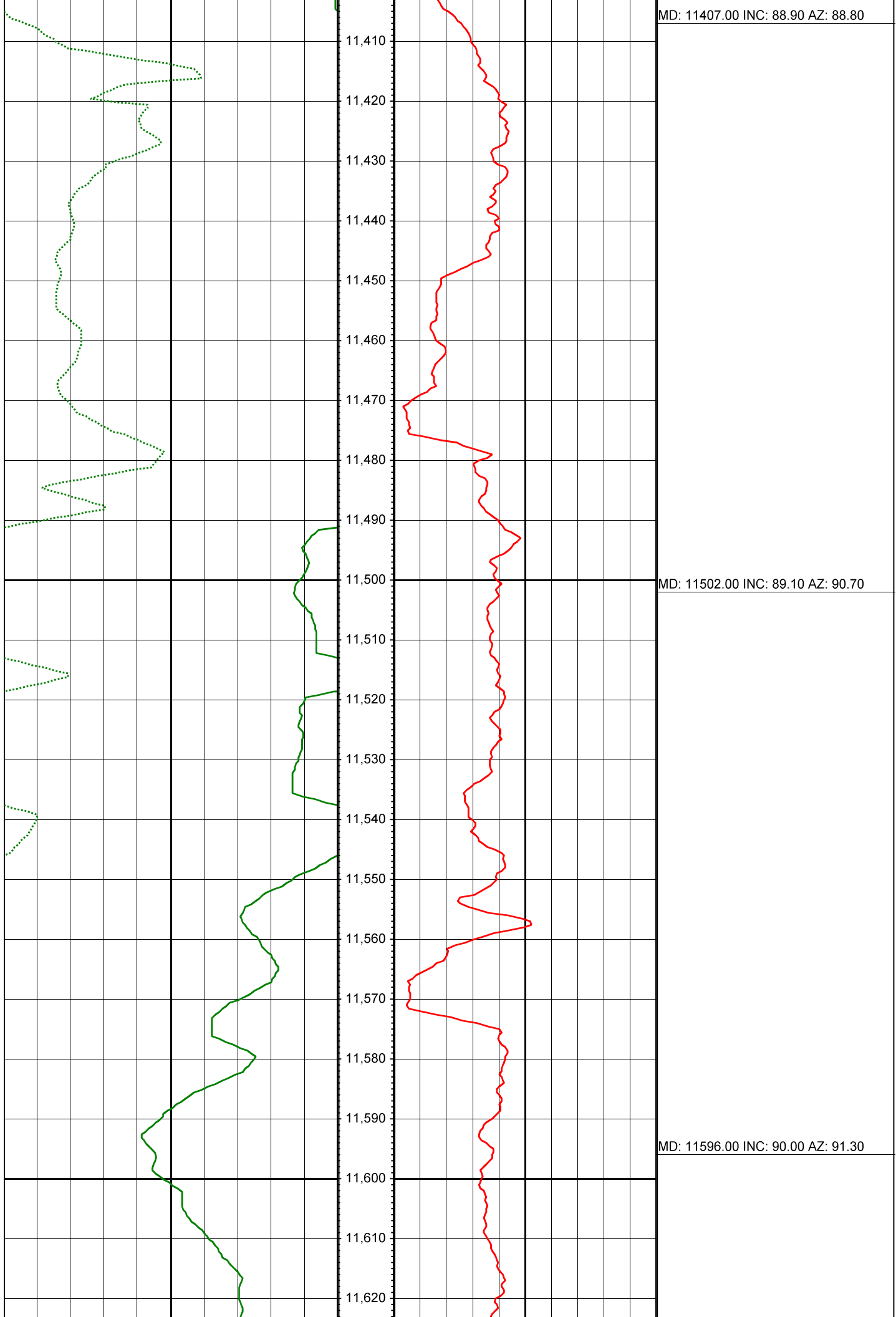
MD: 11029.00 INC: 89.60 AZ: 89.80

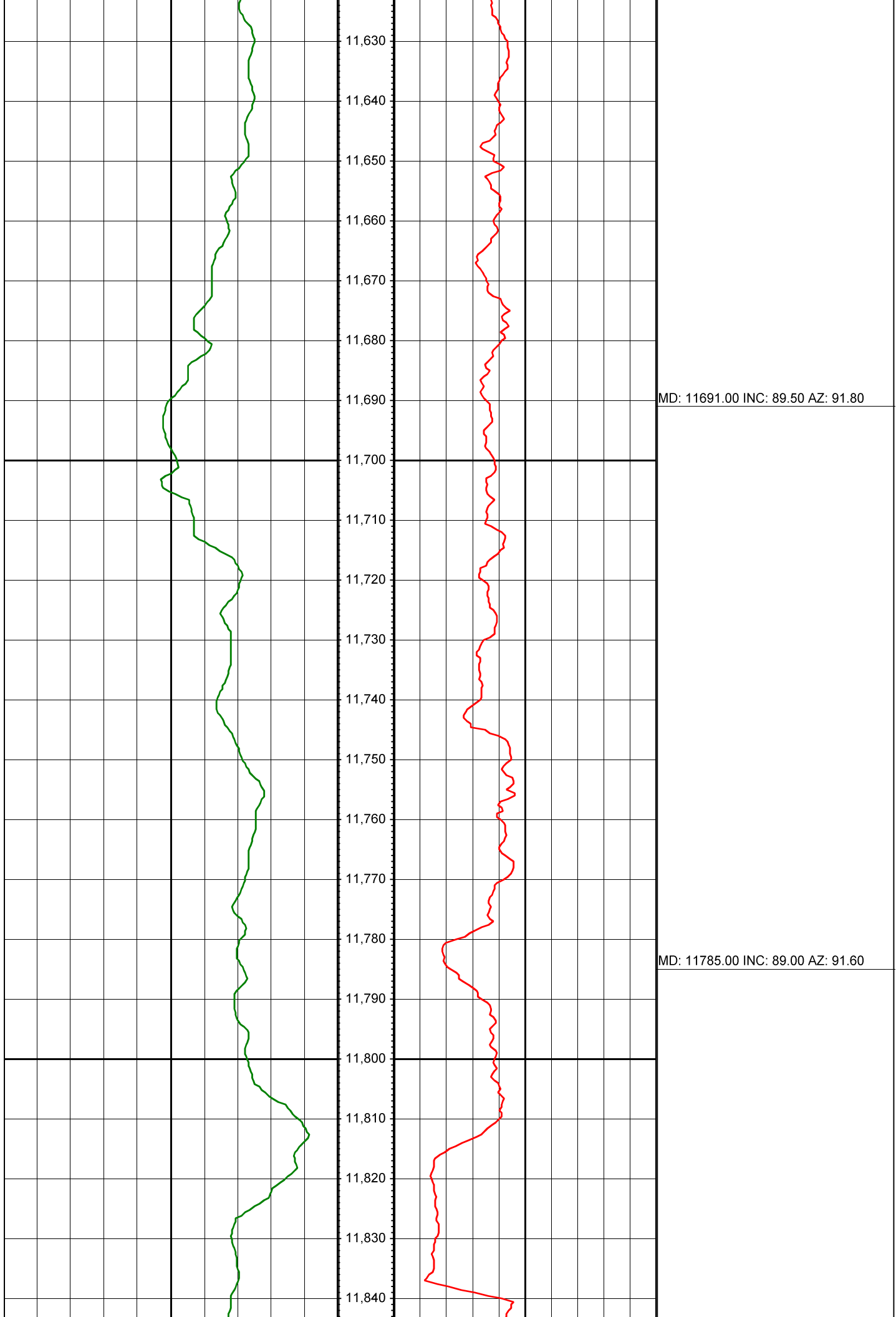
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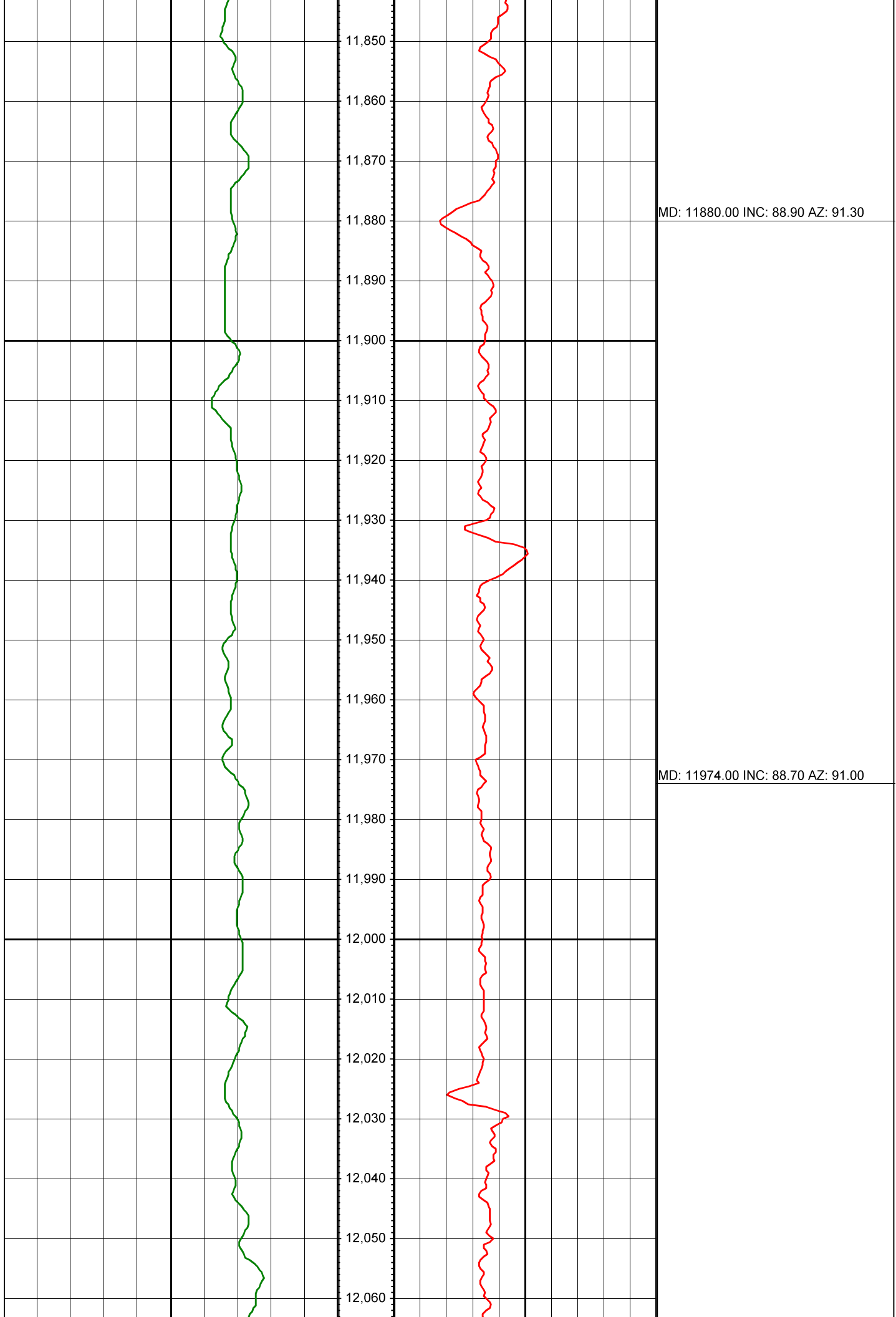


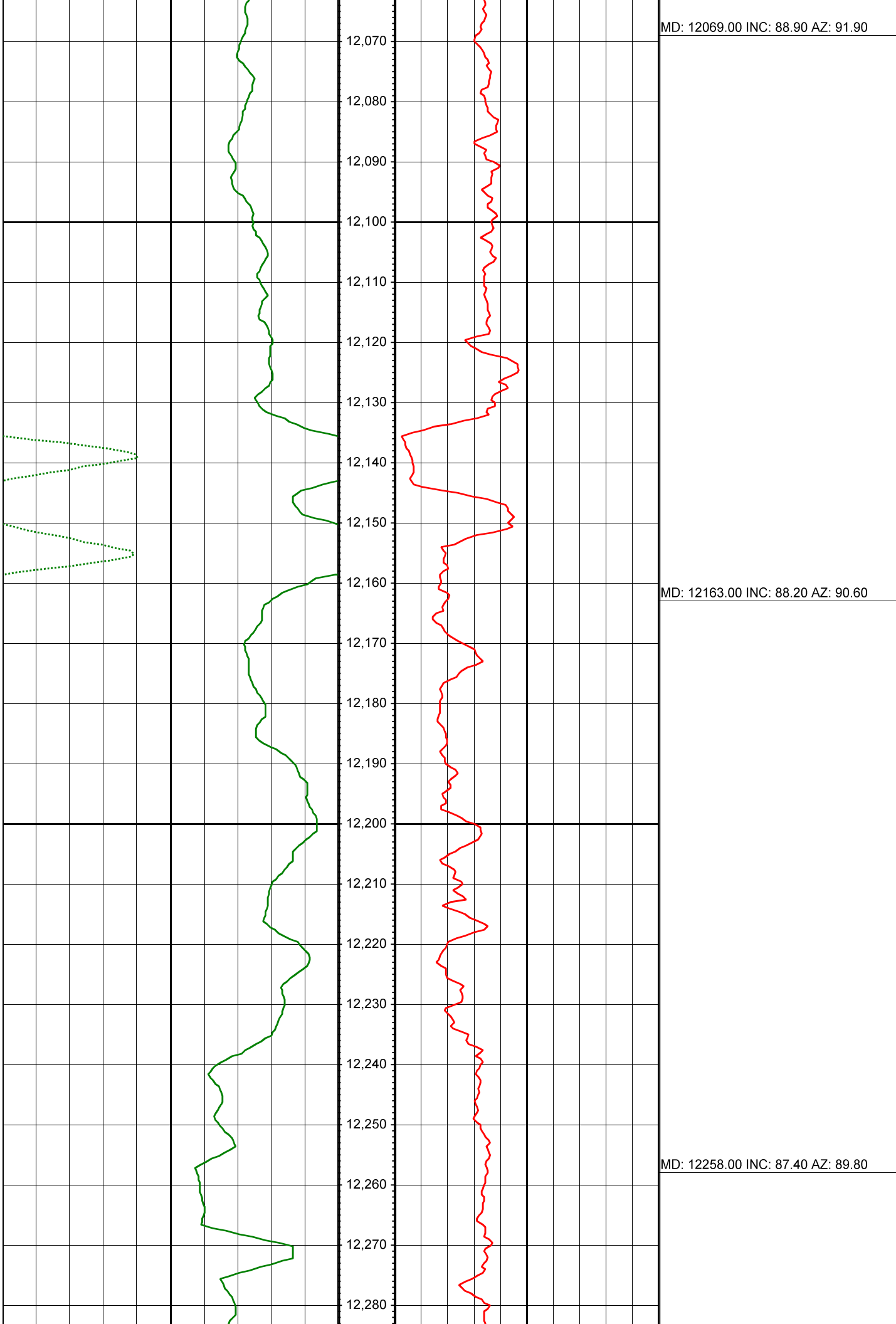
MD: 11218.00 INC: 89.50 AZ: 89.30

MD: 11313.00 INC: 89.10 AZ: 89.10





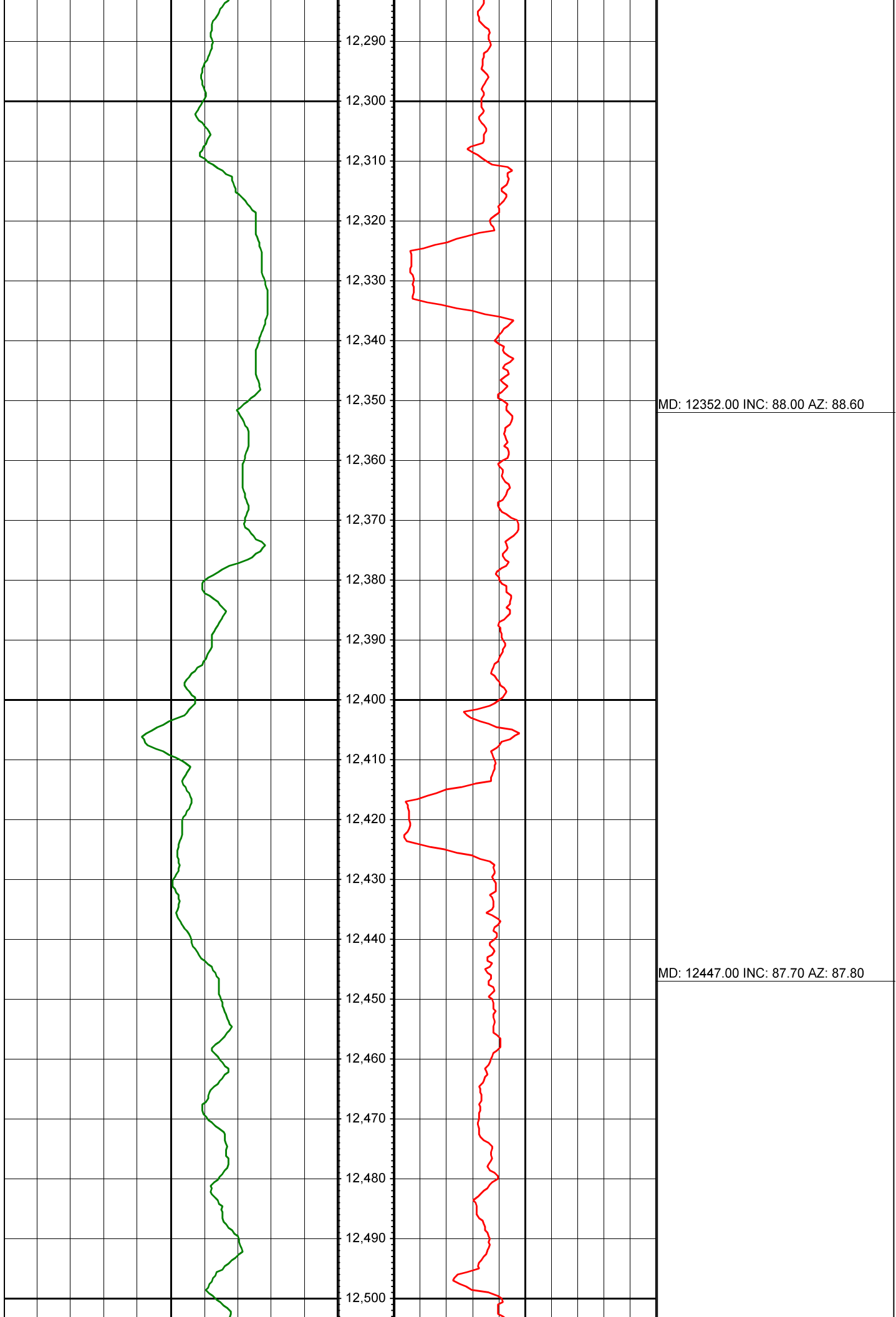


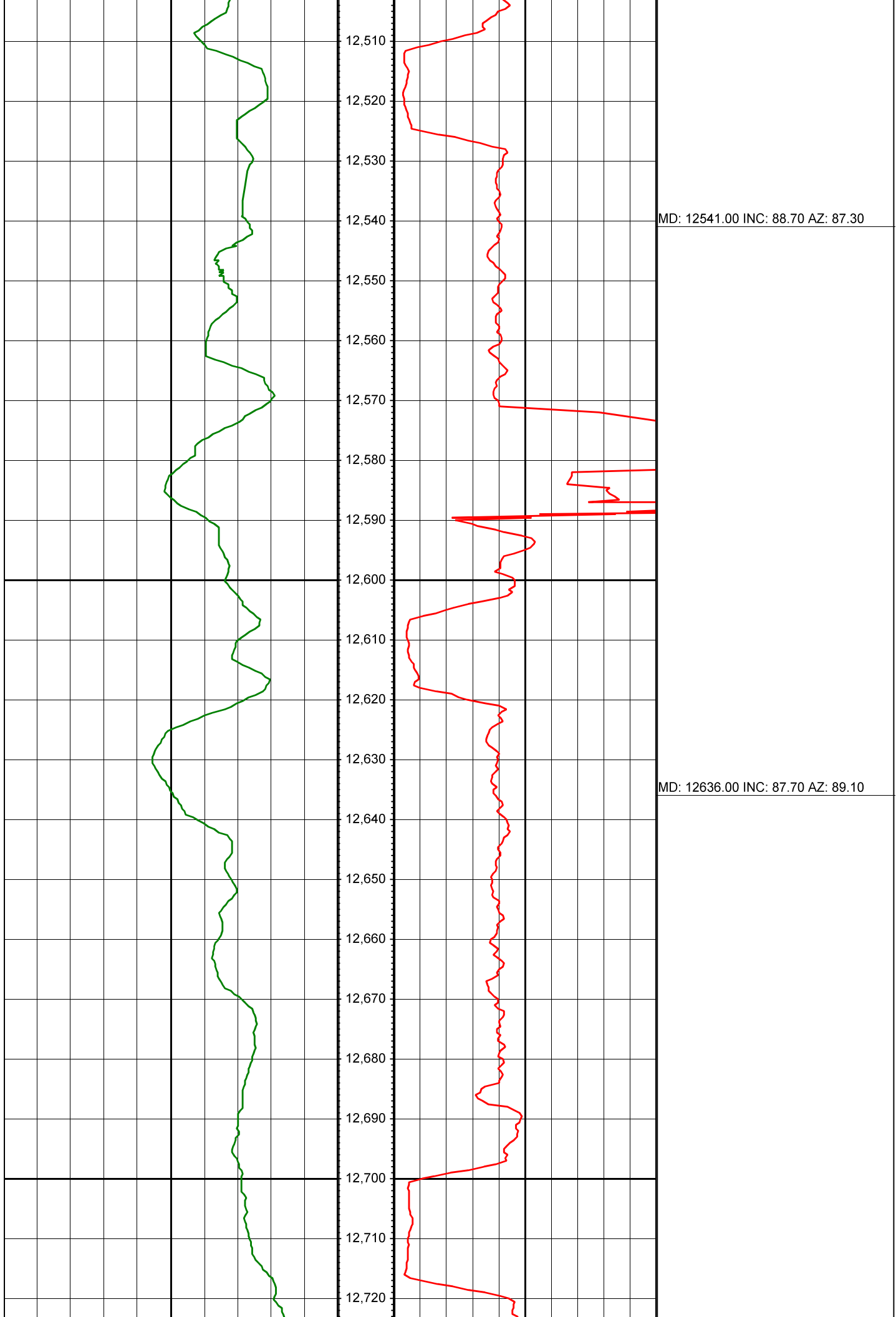


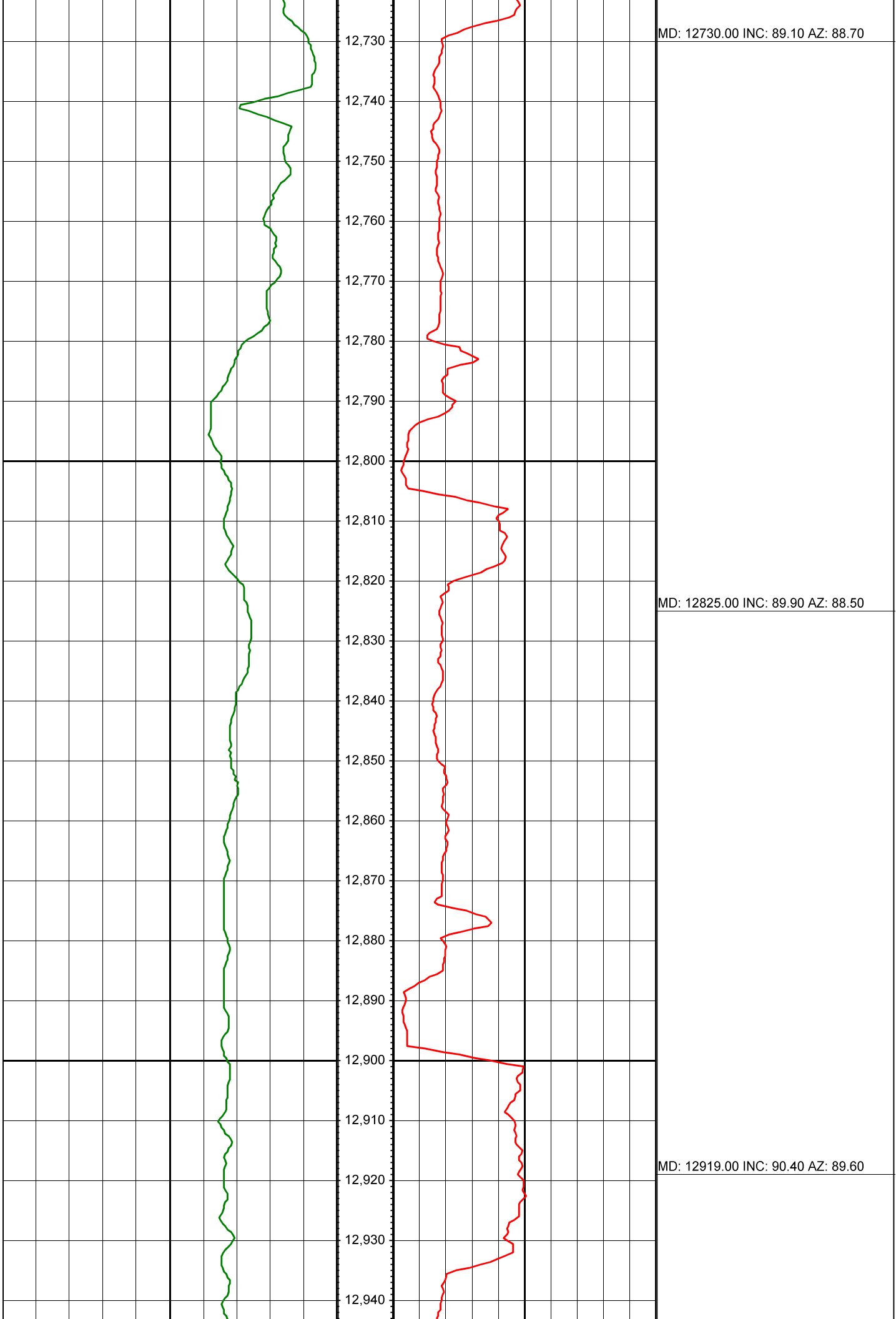
MD: 12069.00 INC: 88.90 AZ: 91.90

MD: 12163.00 INC: 88.20 AZ: 90.60

MD: 12258.00 INC: 87.40 AZ: 89.80









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MD: 13014.00 INC: 90.30 AZ: 89.50

MD: 13108.00 INC: 89.80 AZ: 89.20

