



Cathedral Energy Services
1949 North Pyrite Road
Casper, Wyoming 82604

145147

5":100' - MD

7/15/2014 10:56:45 AM

CATHEDRAL

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

Country: U.S.A.

State / Province: Colorado

County / Parish: Weld

Started: 04/22/2014 11:00 PM

API/UWI: 05-123-38074-00

Field: Wattenberg (Niobrara)

Well: Edith Ann-Duckworth 4G-21H-0268

Rig: Patterson UTI Drilling 272

Ended: 06/11/2014 01:00 AM

Gamma Ray
Section Plane: 0.00
Magnetic North: 8.69
Gamma Attenuation Factor: 1.80
Gamma Averaging: 7%

Personnel

Day Hand: R. Moulton

Night Hand: E. King

Comp. Emp: Andrew Baltes

Maximum Temperature: 250°F

Location

Latitude: 40.117670

Longitude: -105.003460

Elev. GL: 4927

Elev. DF:

Elev. KB: 4955.5

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

Hole Data

Size	From	To
12-1/4	0	966
8-3/4	966	7876
6-1/8	7876	16702

Casing Data

Size	From	To
9-5/8	0	925
7	0	7860
4-1/2	0	16690

Bit Sizes

Size	From	To
12-1/4	0	966
8-3/4	966	7876
6-1/8	7876	16702

Mud Data

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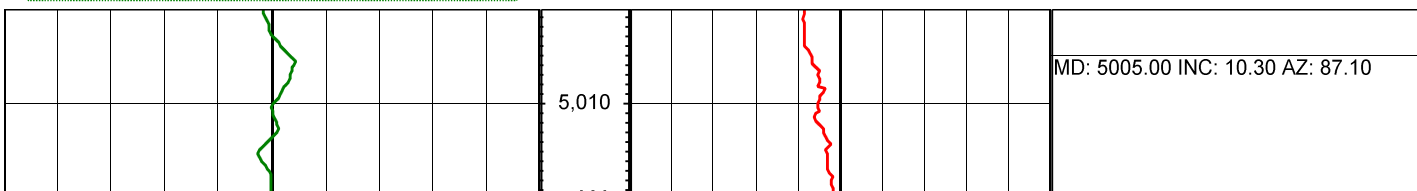
Tool Run Data

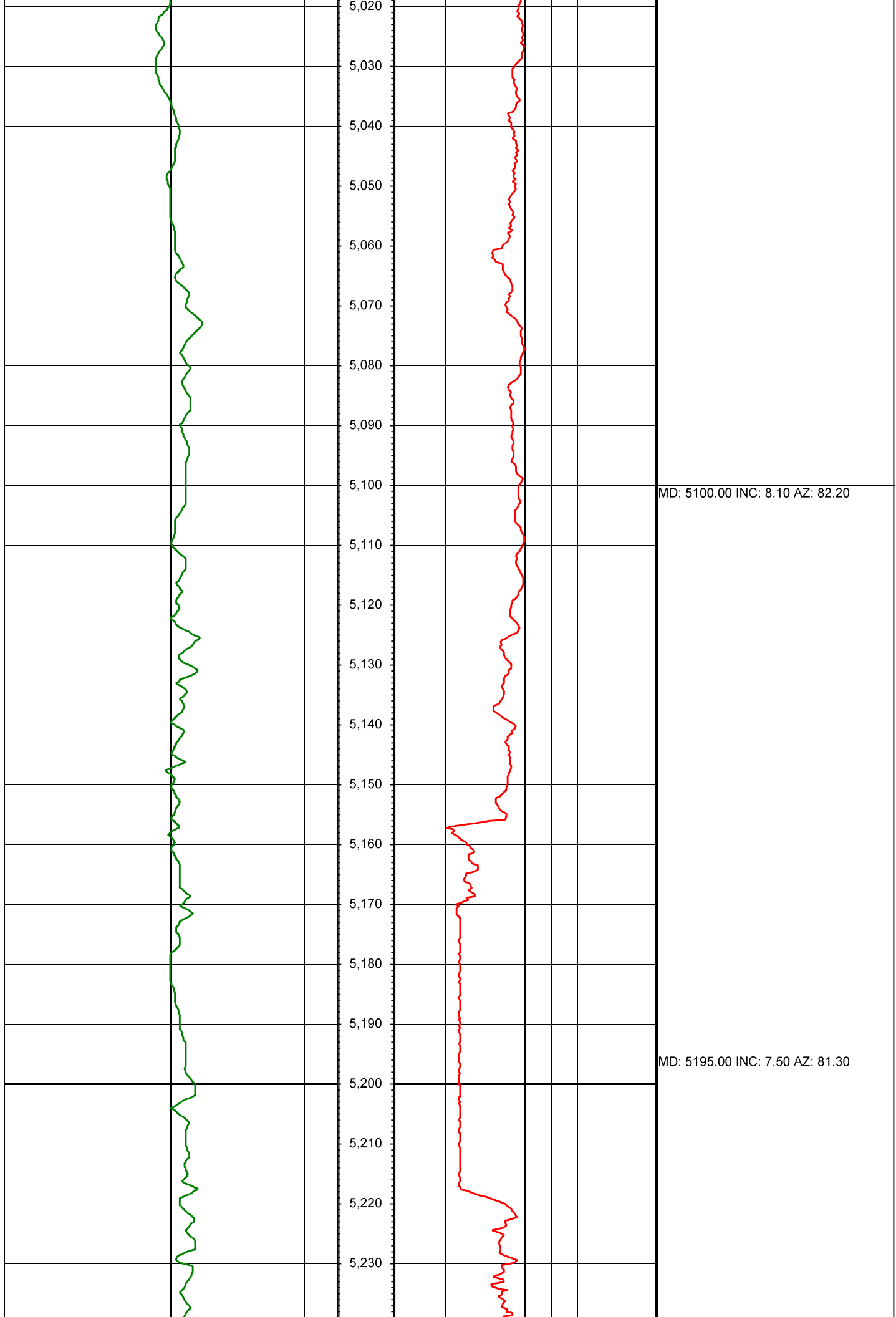
Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
1218	39.14	0	4/24/2014 10:30:59 PM	5000	4/27/2014 9:00:59 AM	7876
1641	37.24	0	5/31/2014 10:45:26 AM	7876	6/8/2014 2:30:26 PM	16095
1641	37.48	0	6/8/2014 5:00:11 PM	16095	6/11/2014 1:00:11 PM	16702

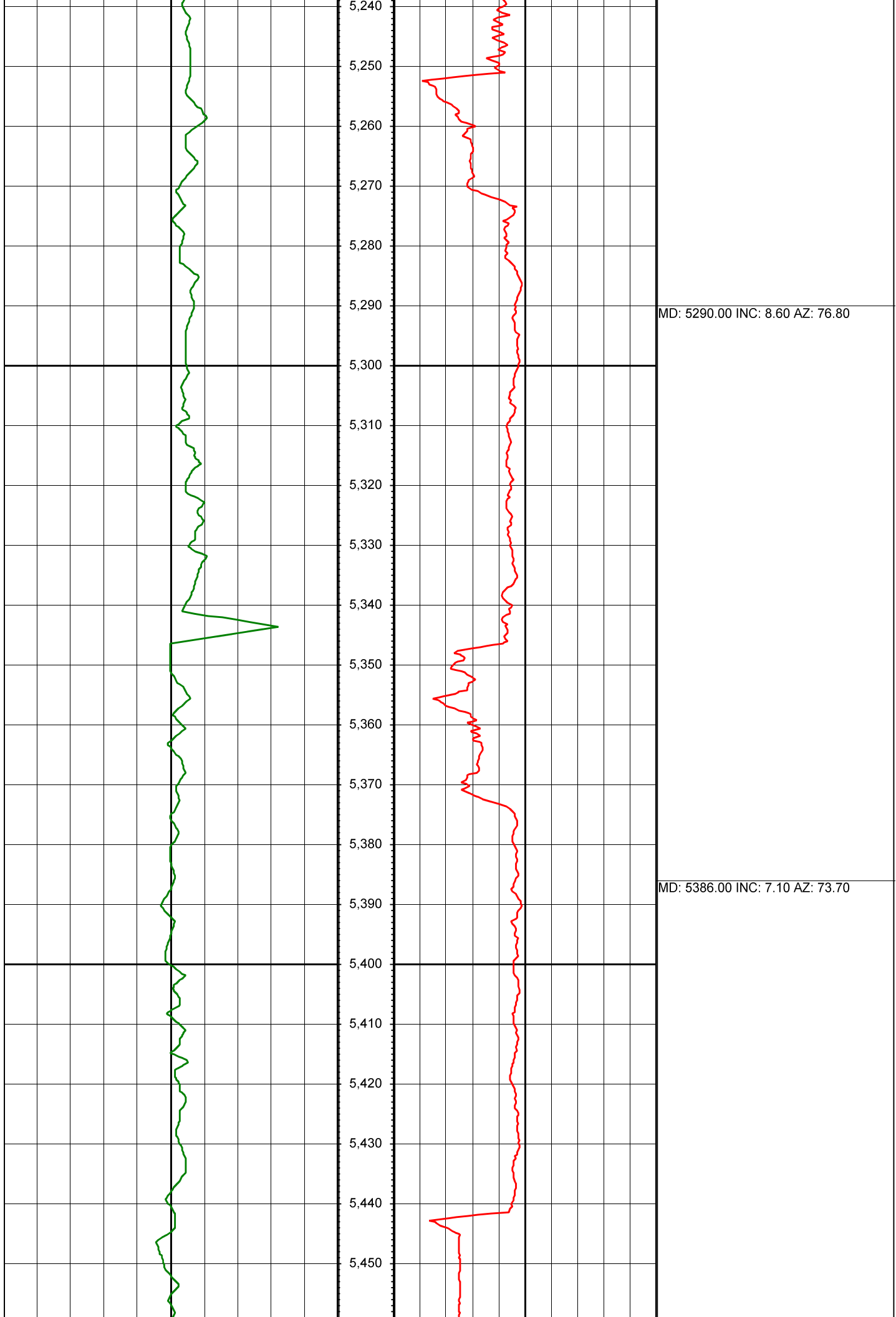
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost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

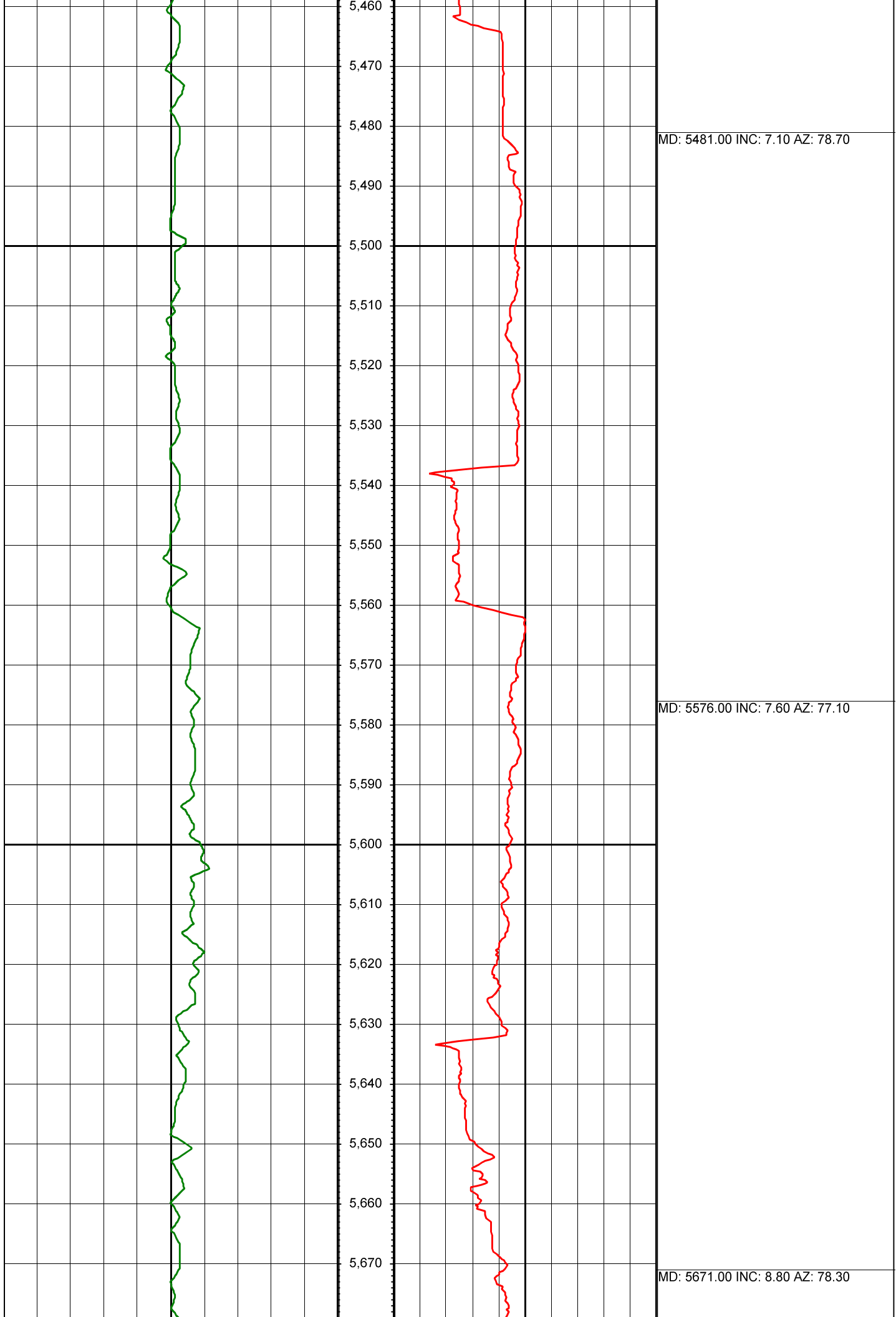
0.00 Gamma Ray (API) 150.00 MD 0.00 ROP (FT/HR) 600.00 Surveys (MD/INC/AZ)

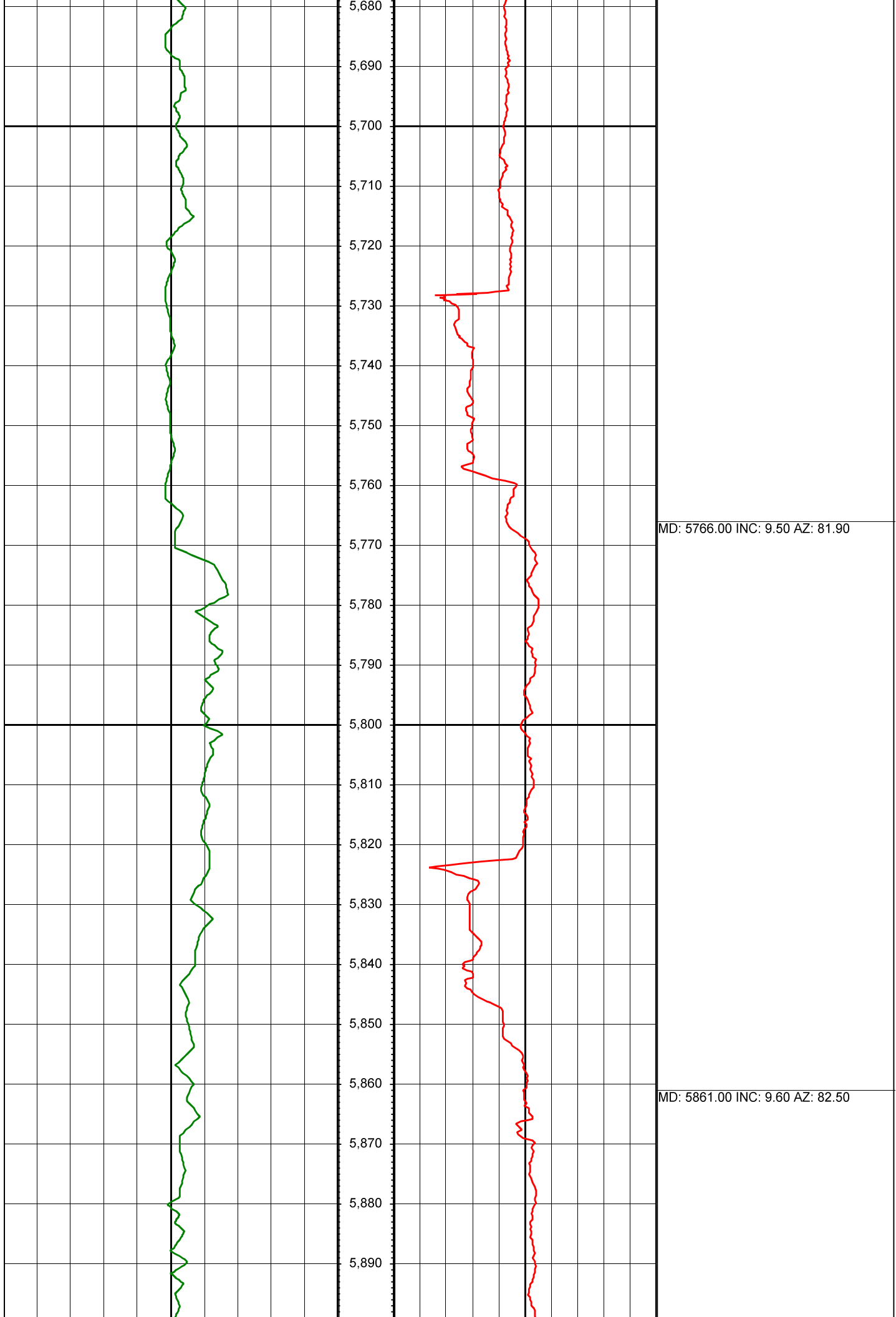
150.00 2 300.00 FT







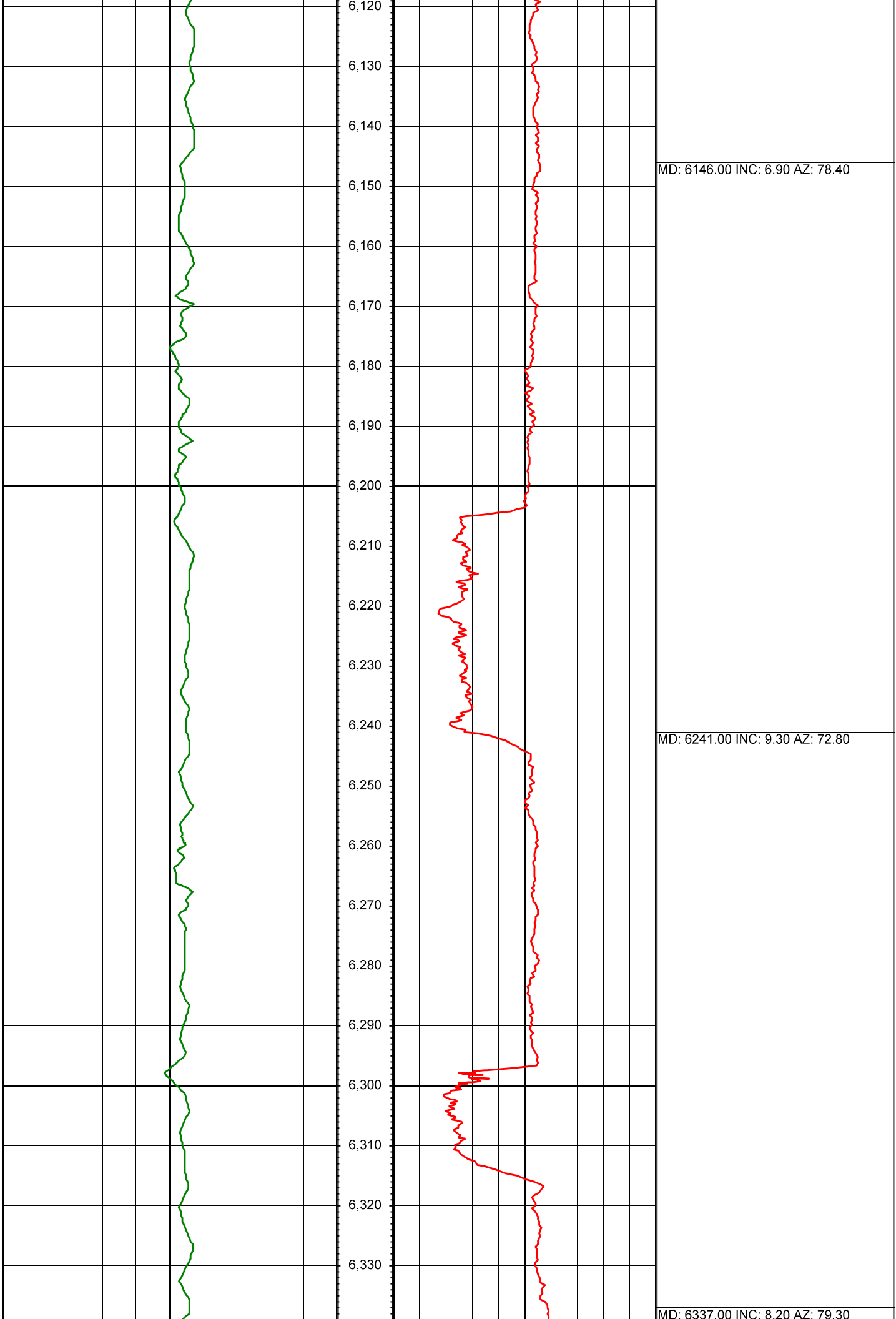


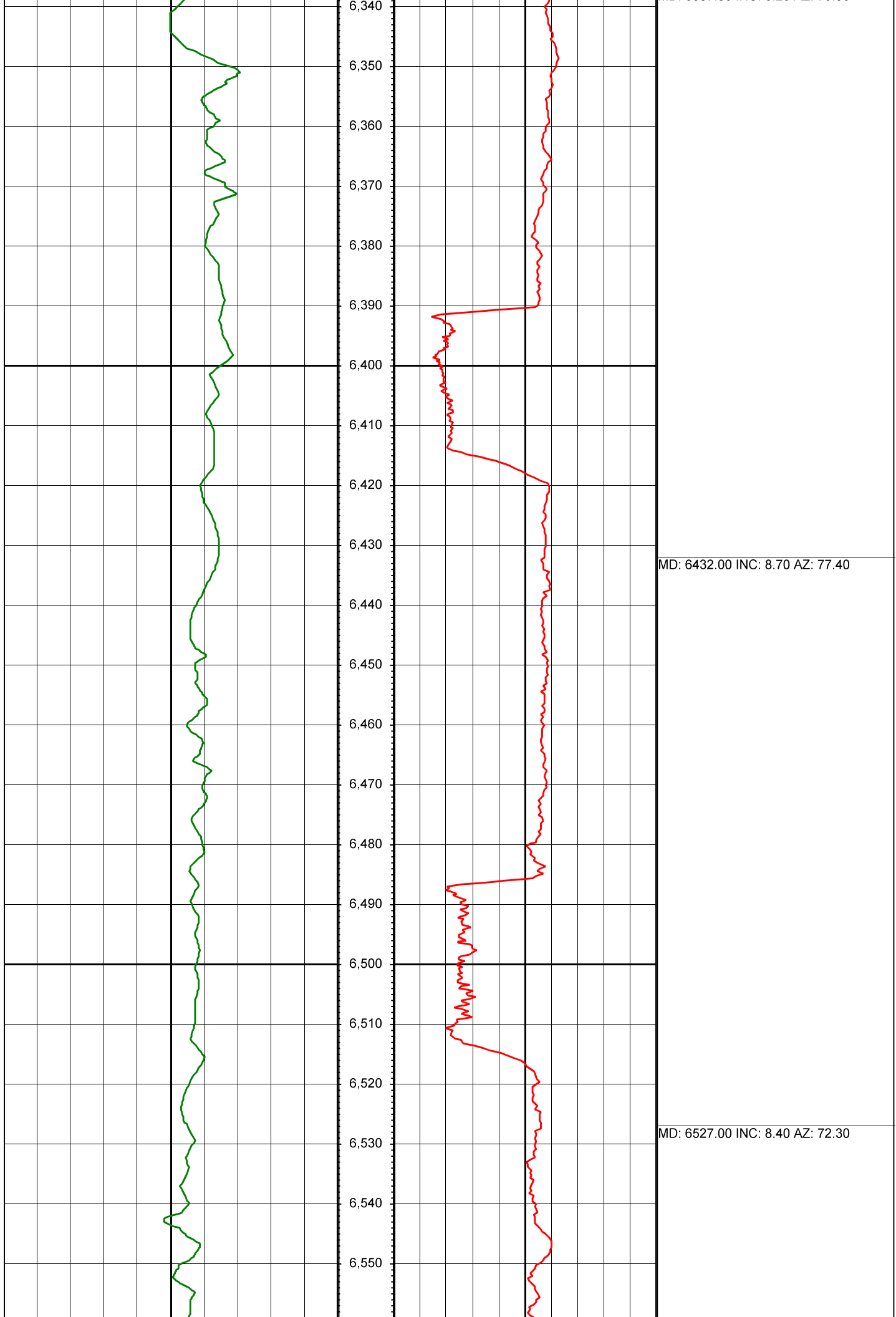


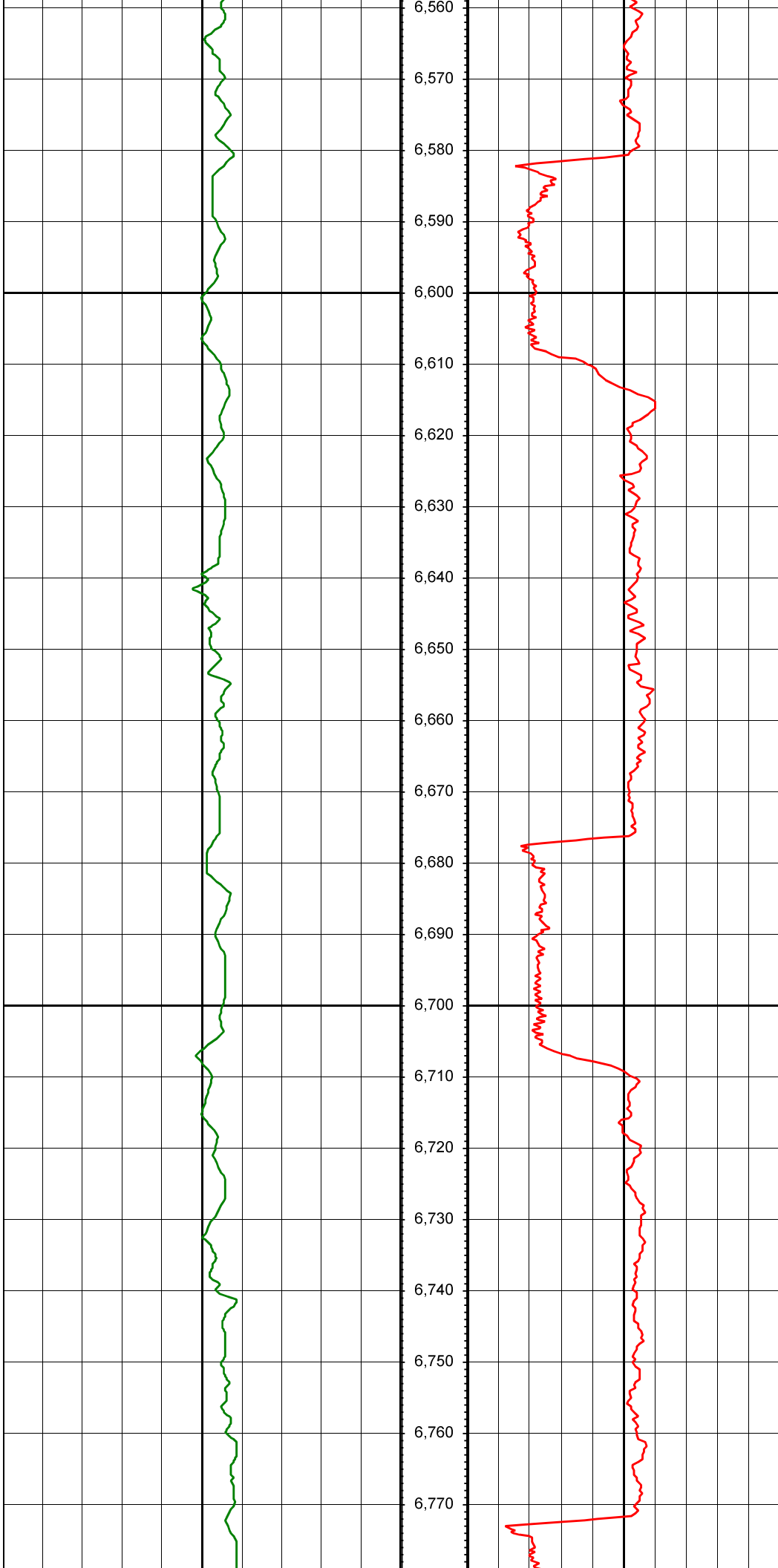


MD: 5956.00 INC: 8.10 AZ: 89.90

MD: 6051.00 INC: 10.50 AZ: 83.70

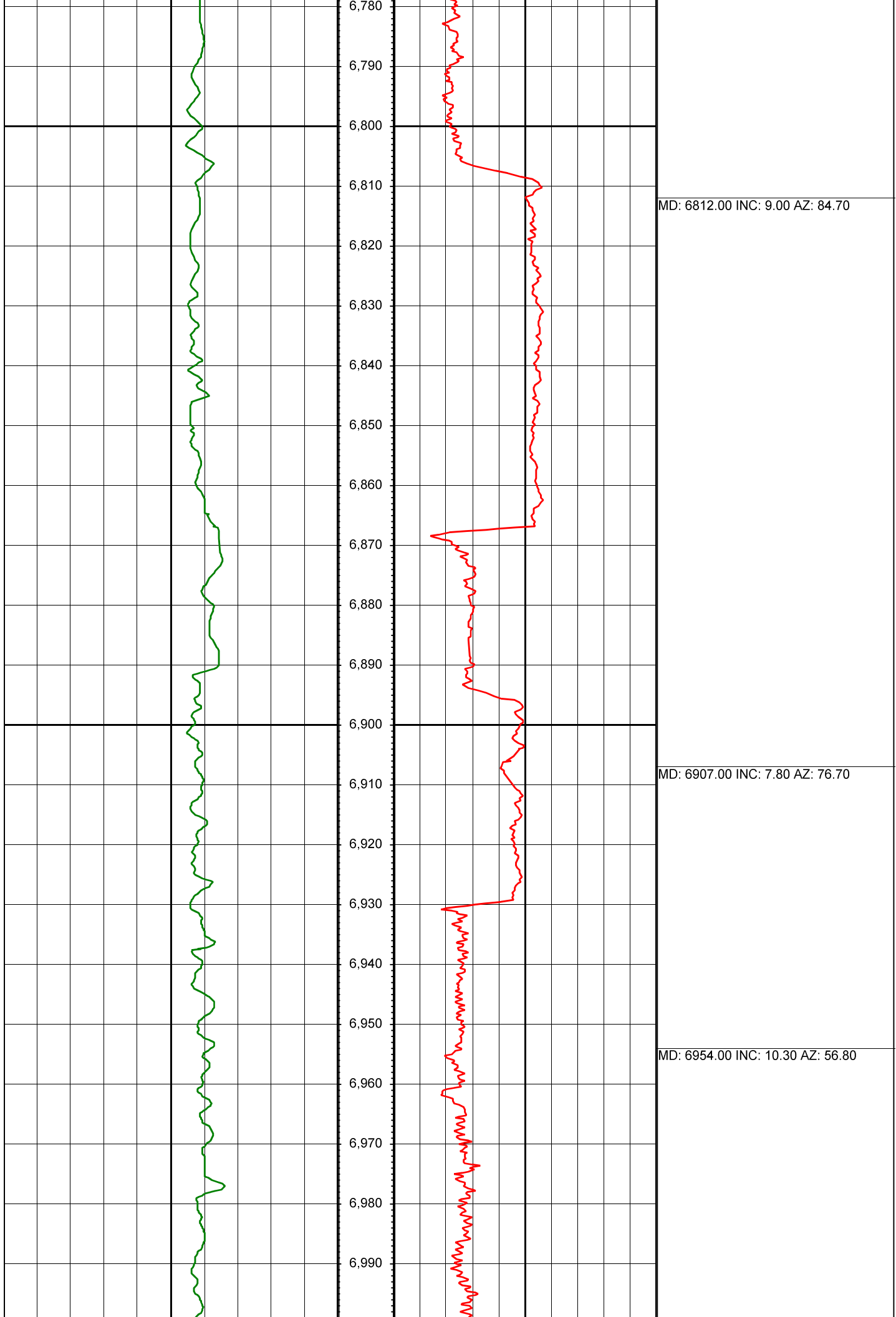


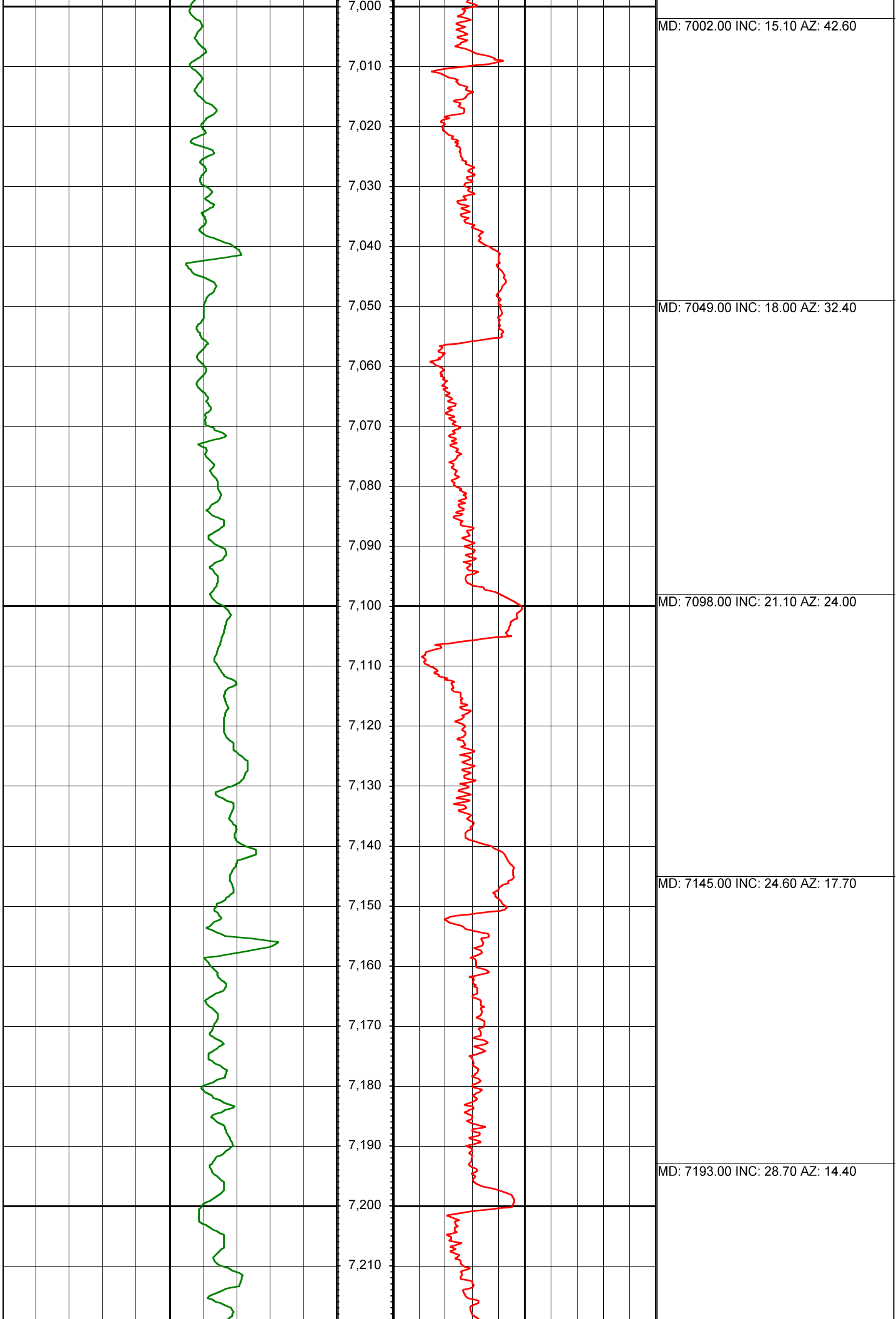


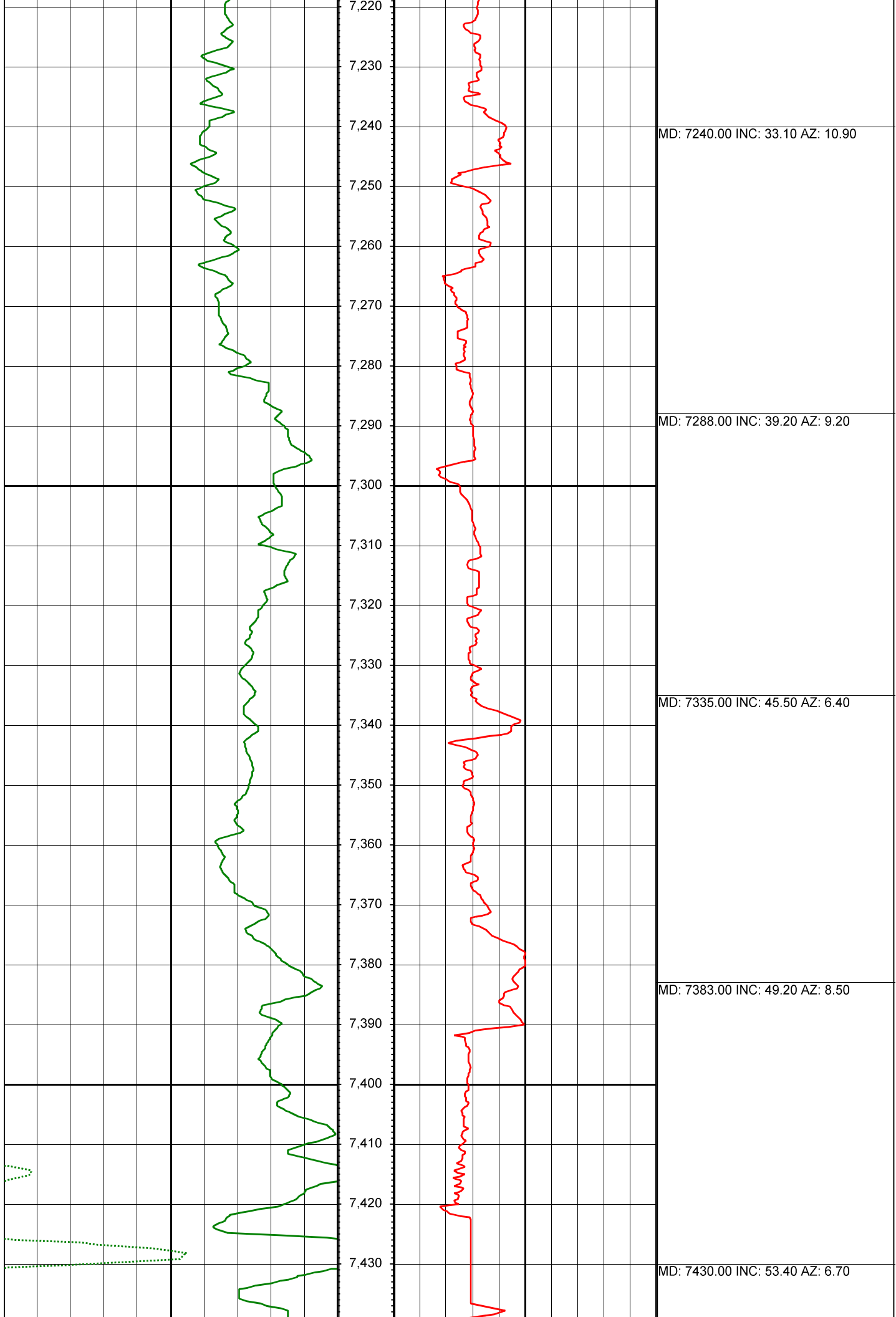


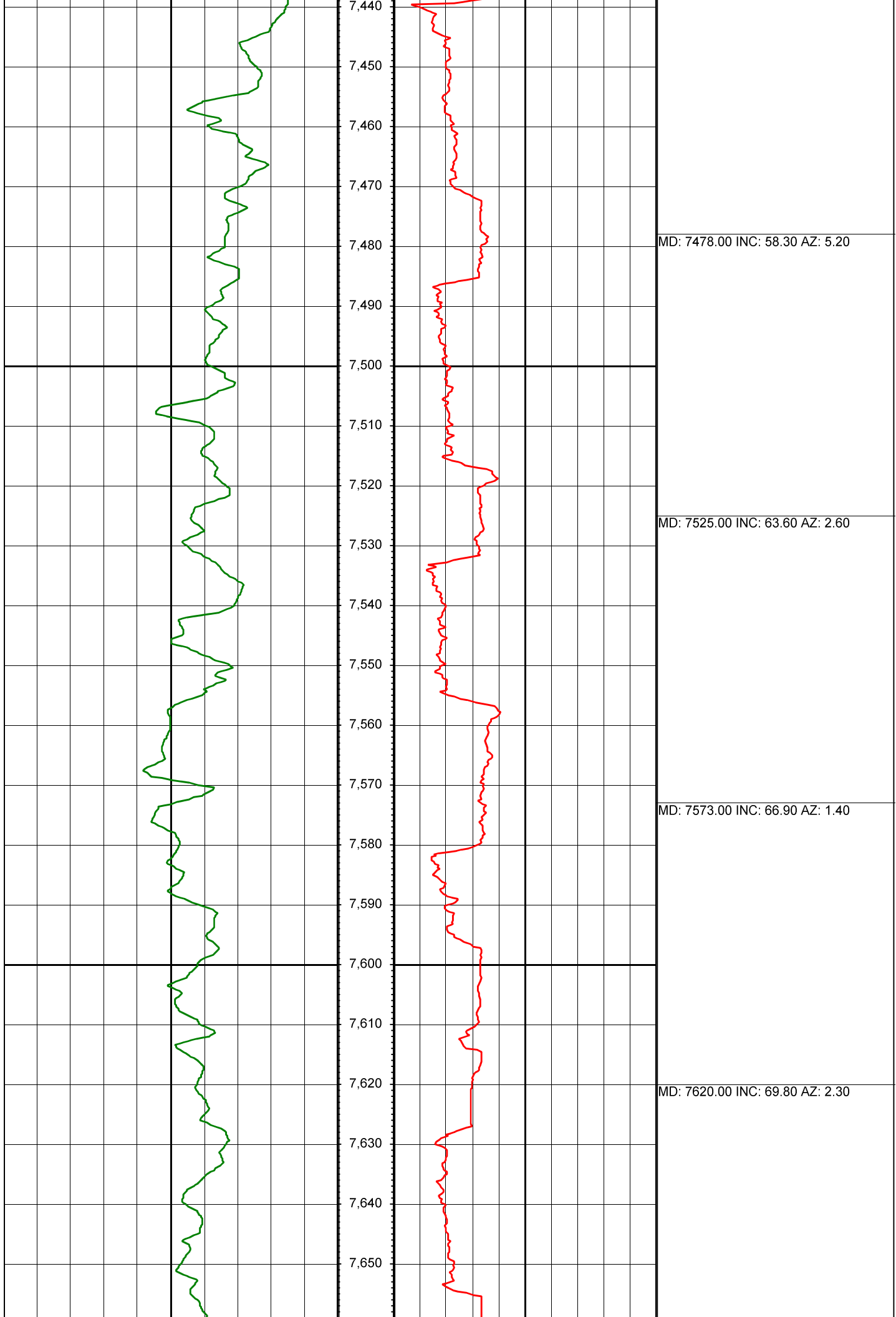
MD: 6622.00 INC: 7.70 AZ: 79.30

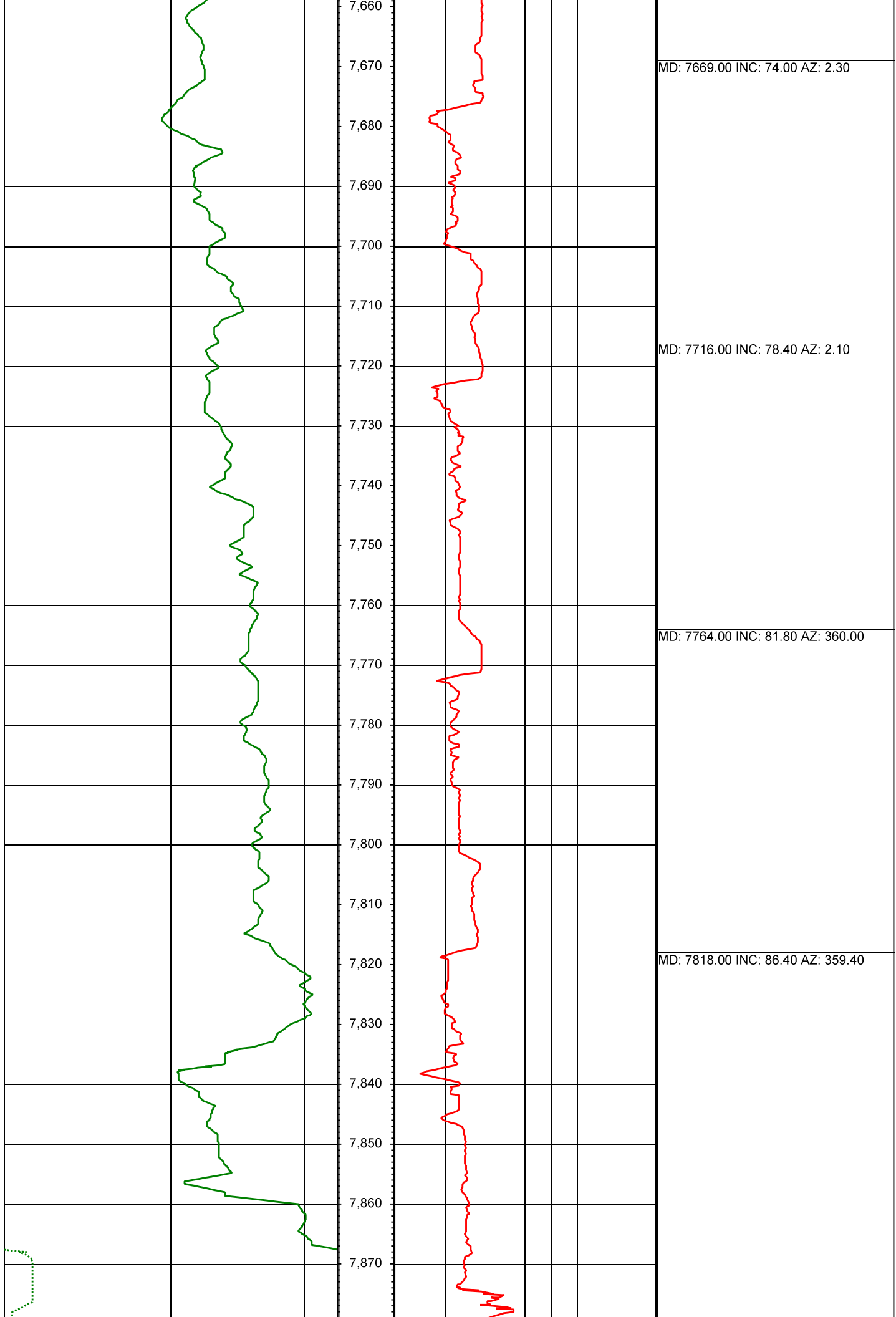
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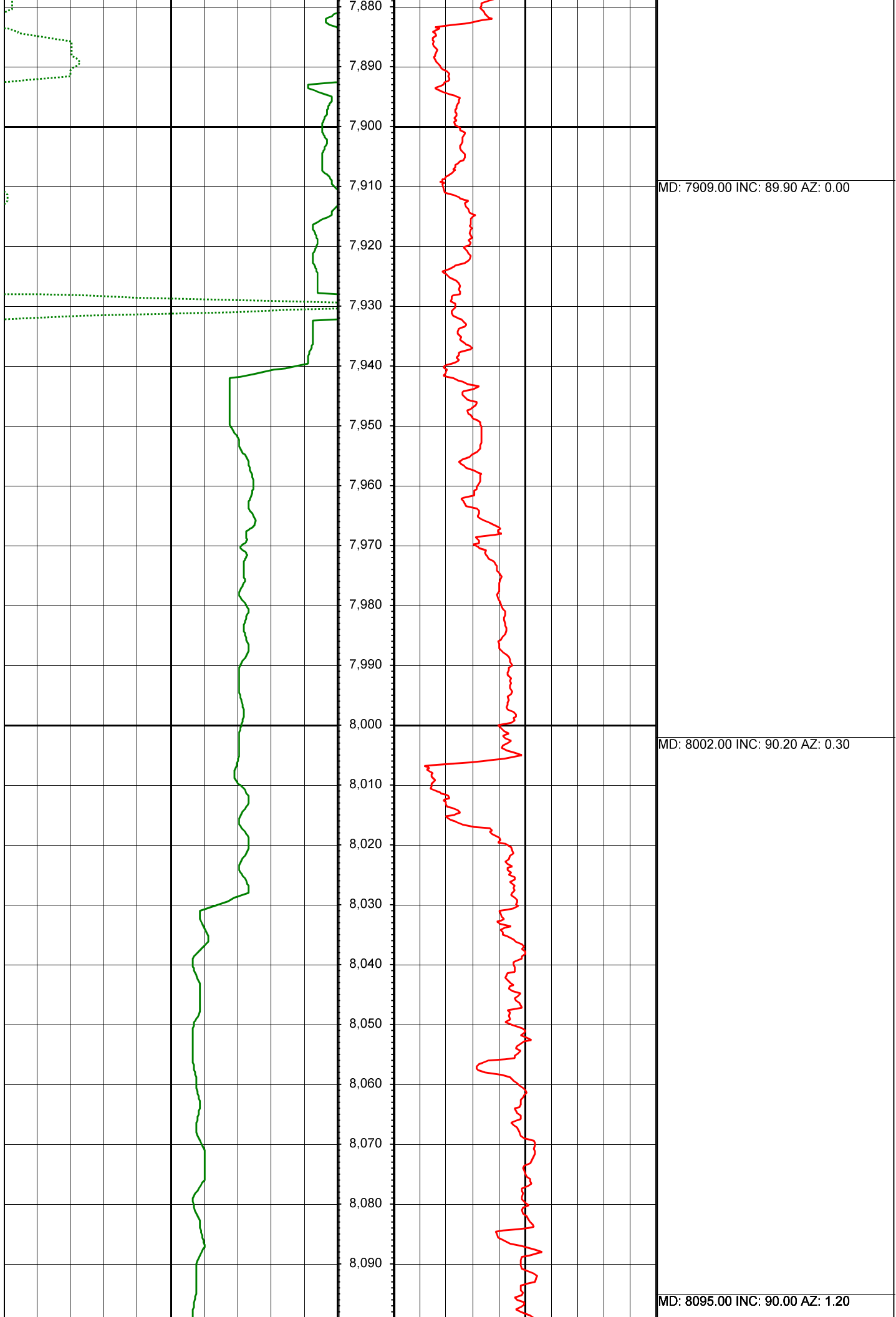


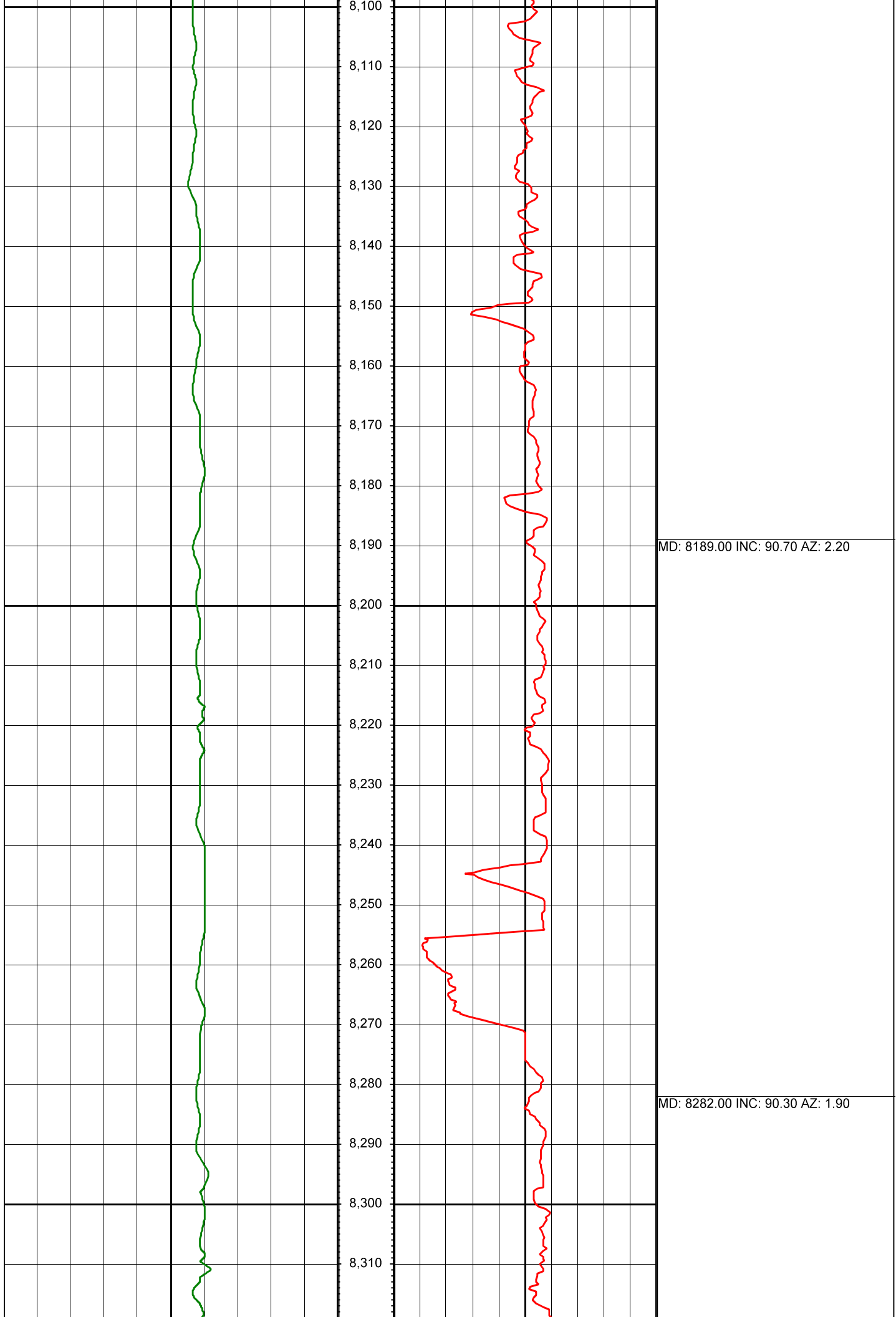


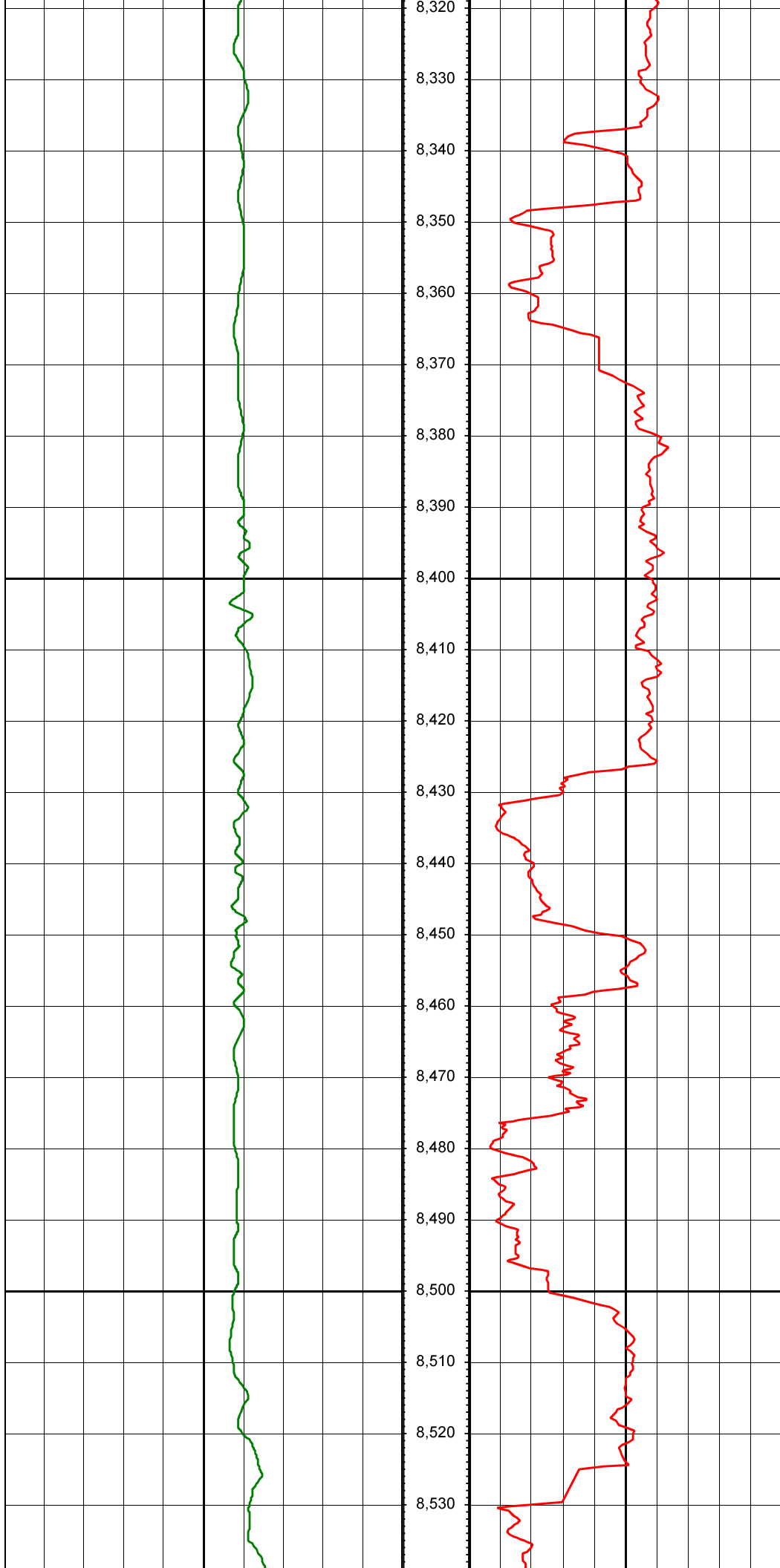






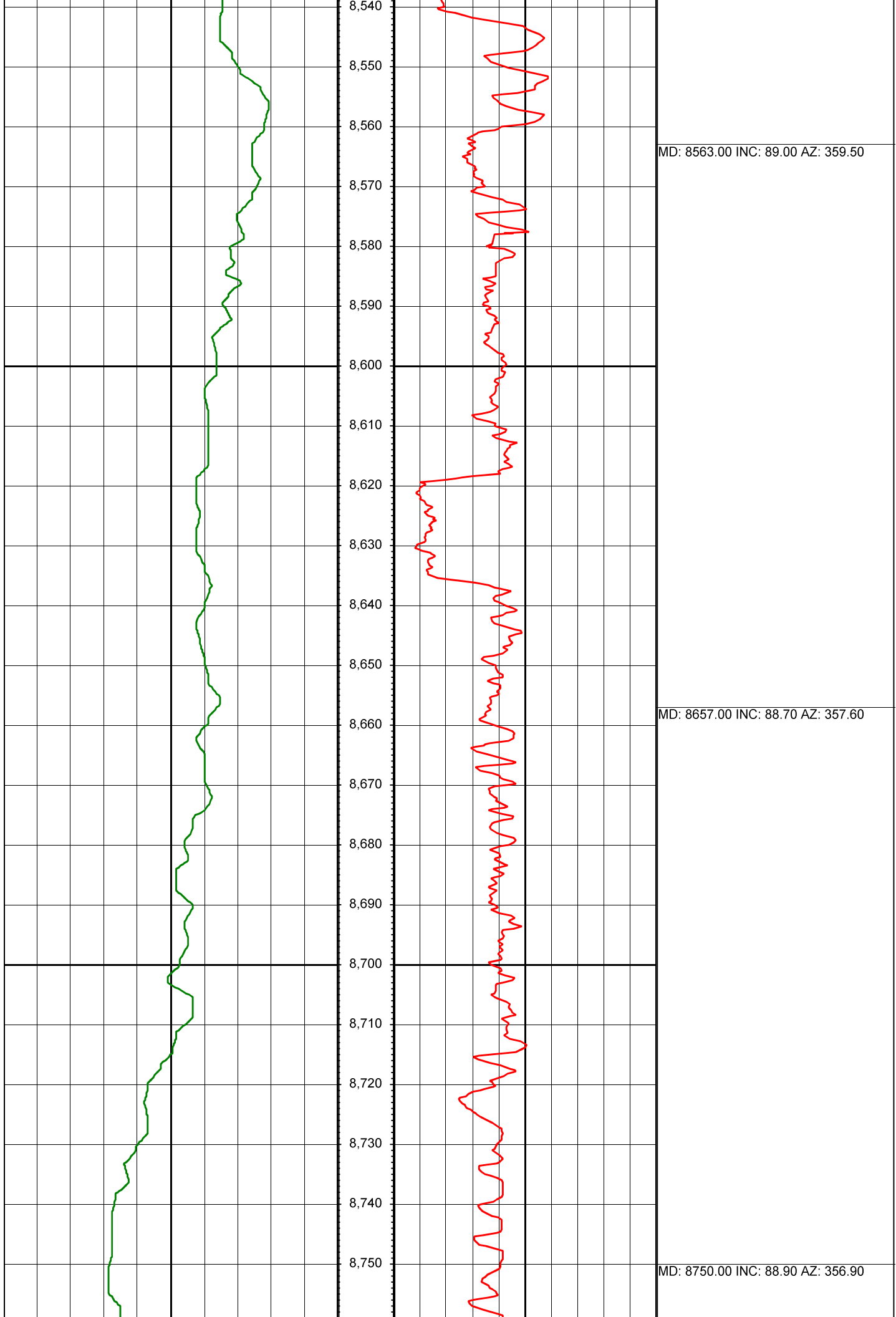


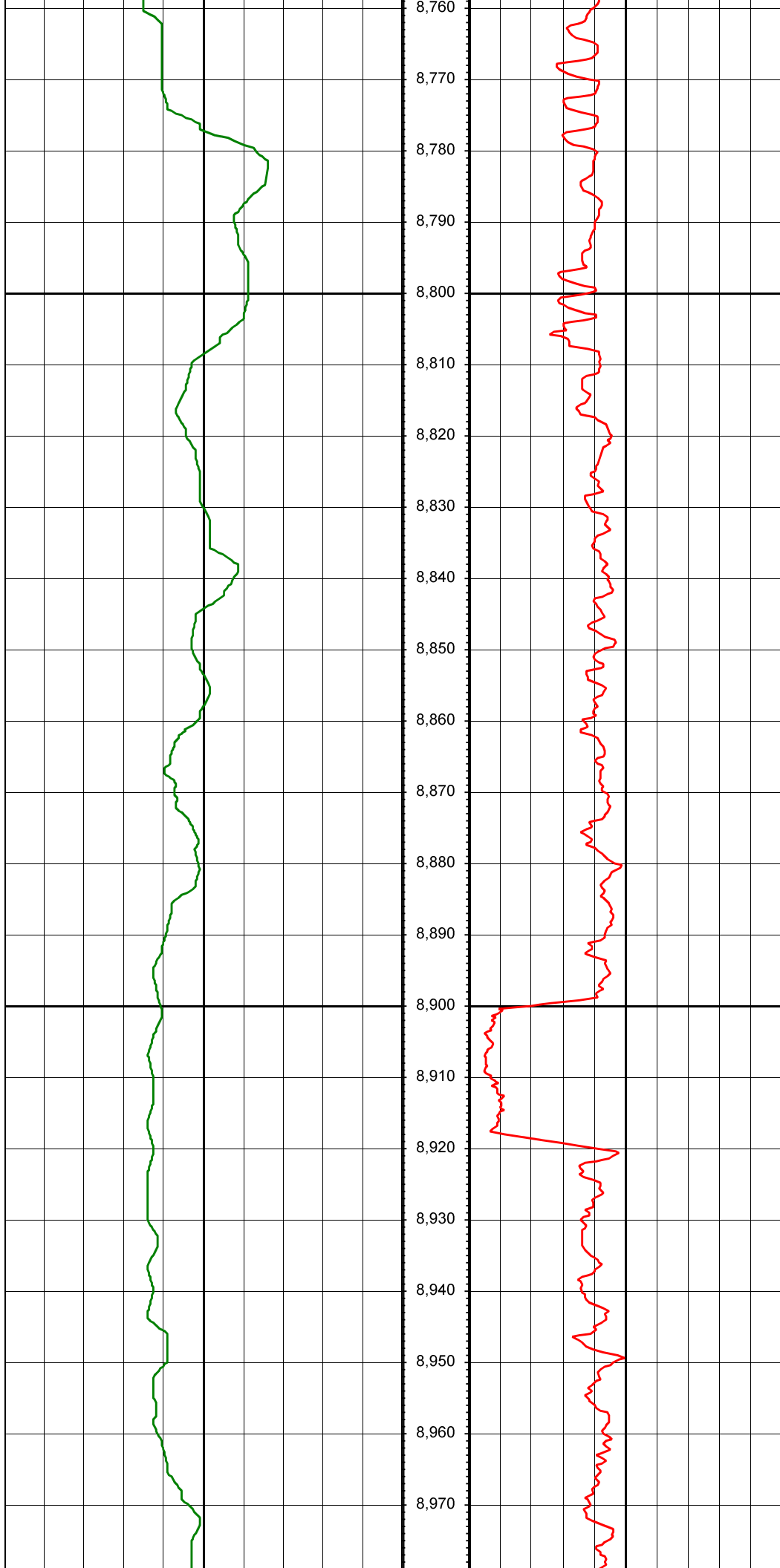




MD: 8376.00 INC: 90.20 AZ: 2.70

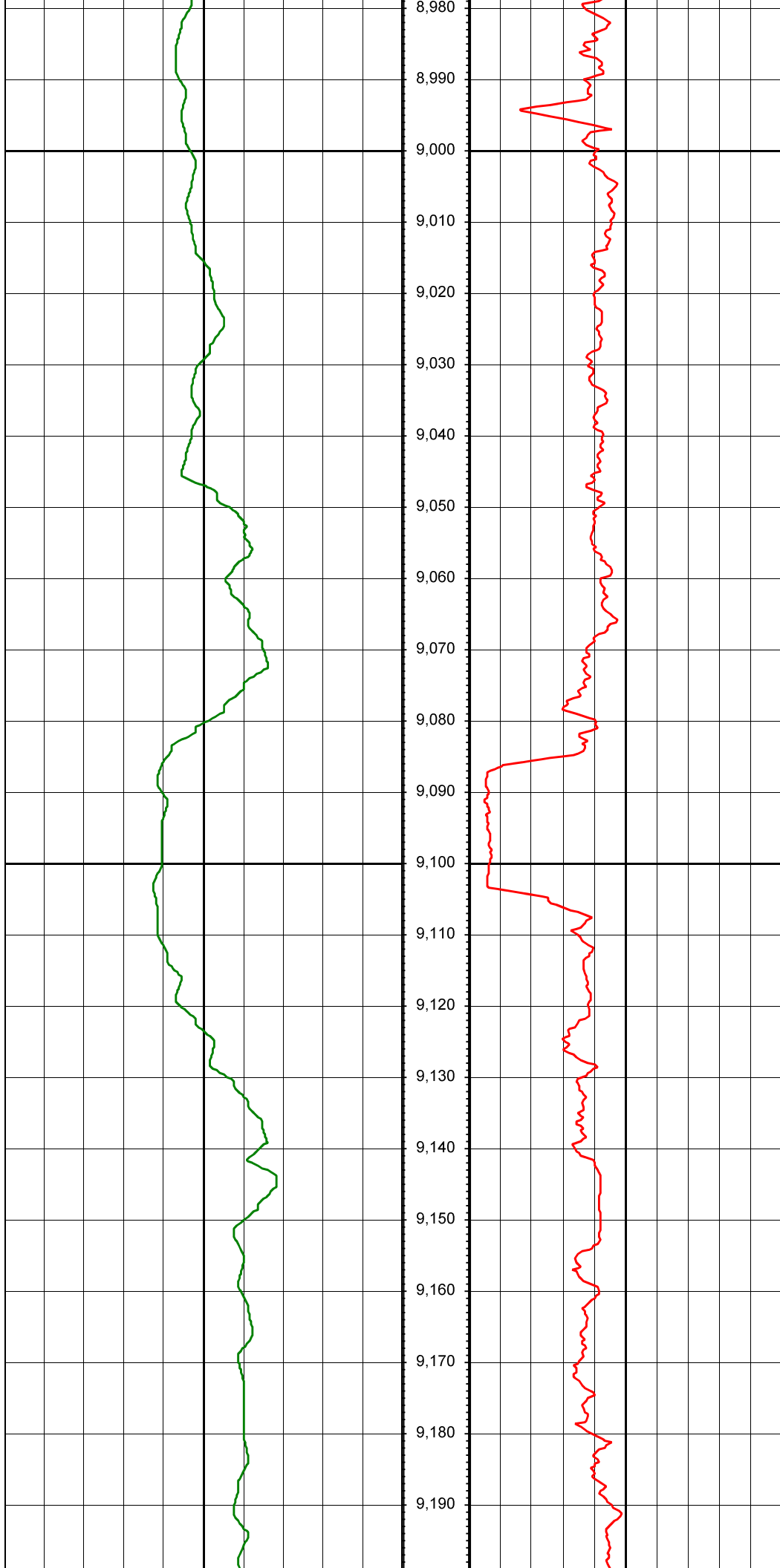
MD: 8469.00 INC: 90.00 AZ: 2.00





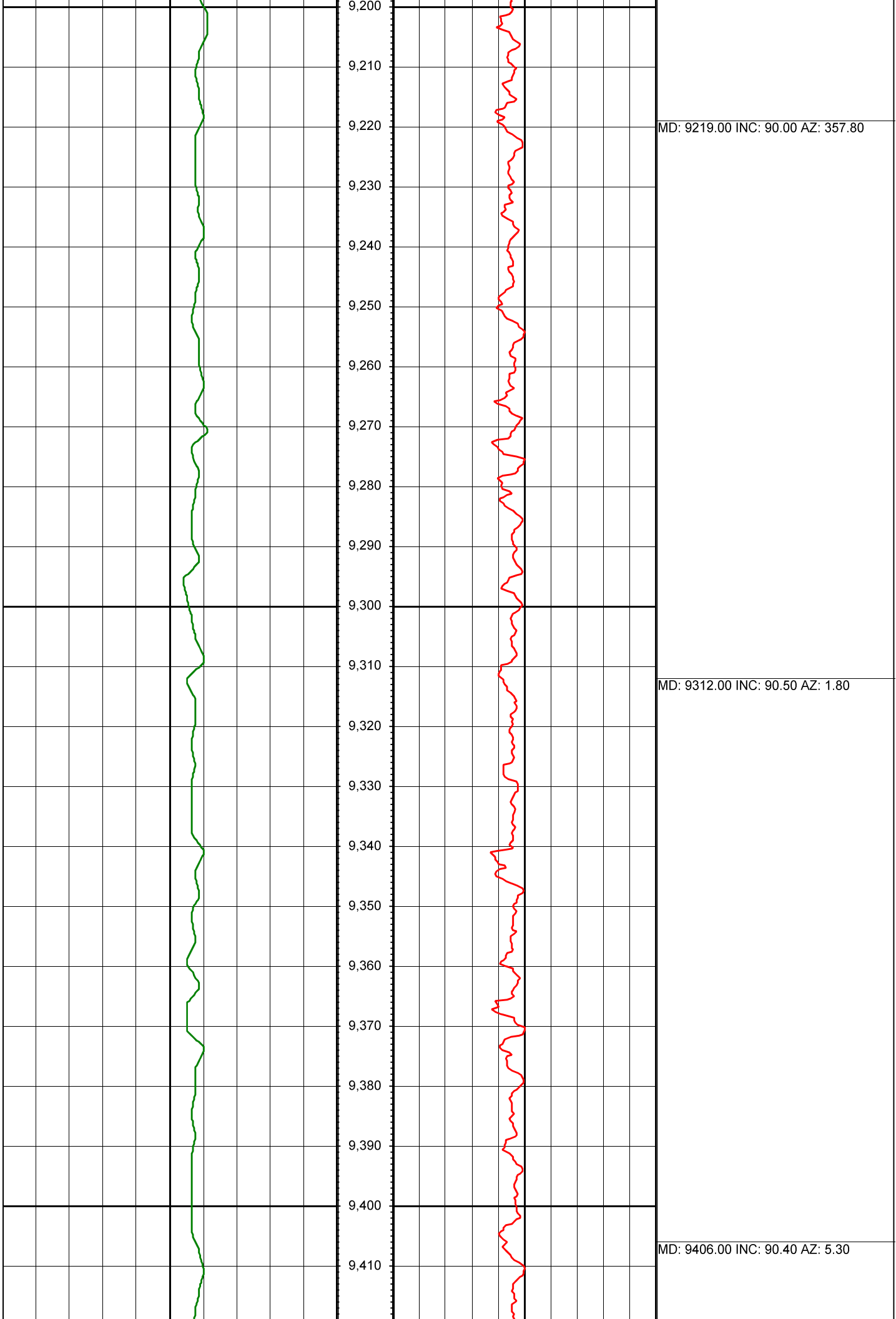
MD: 8845.00 INC: 88.70 AZ: 356.70

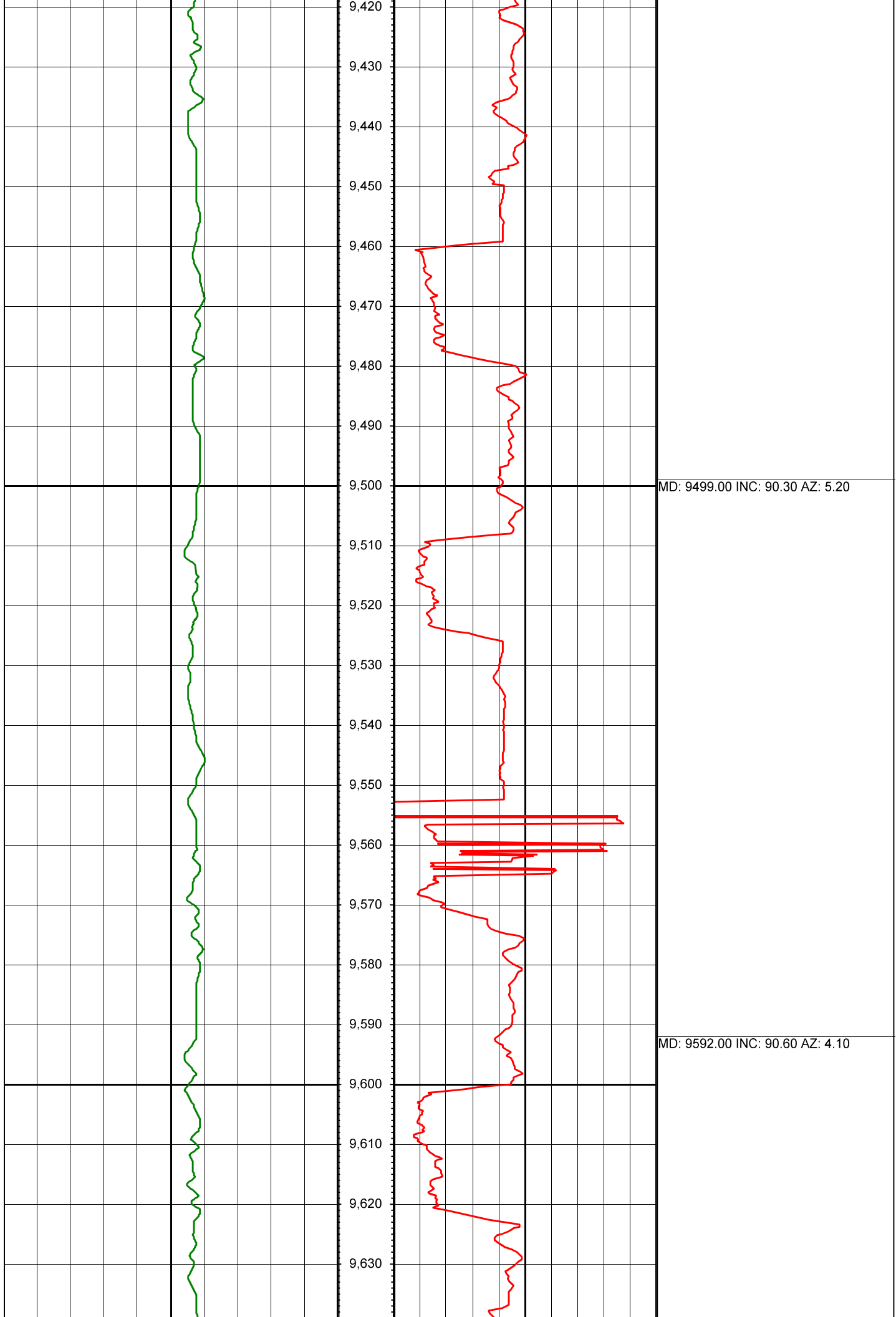
MD: 8938.00 INC: 91.30 AZ: 358.70

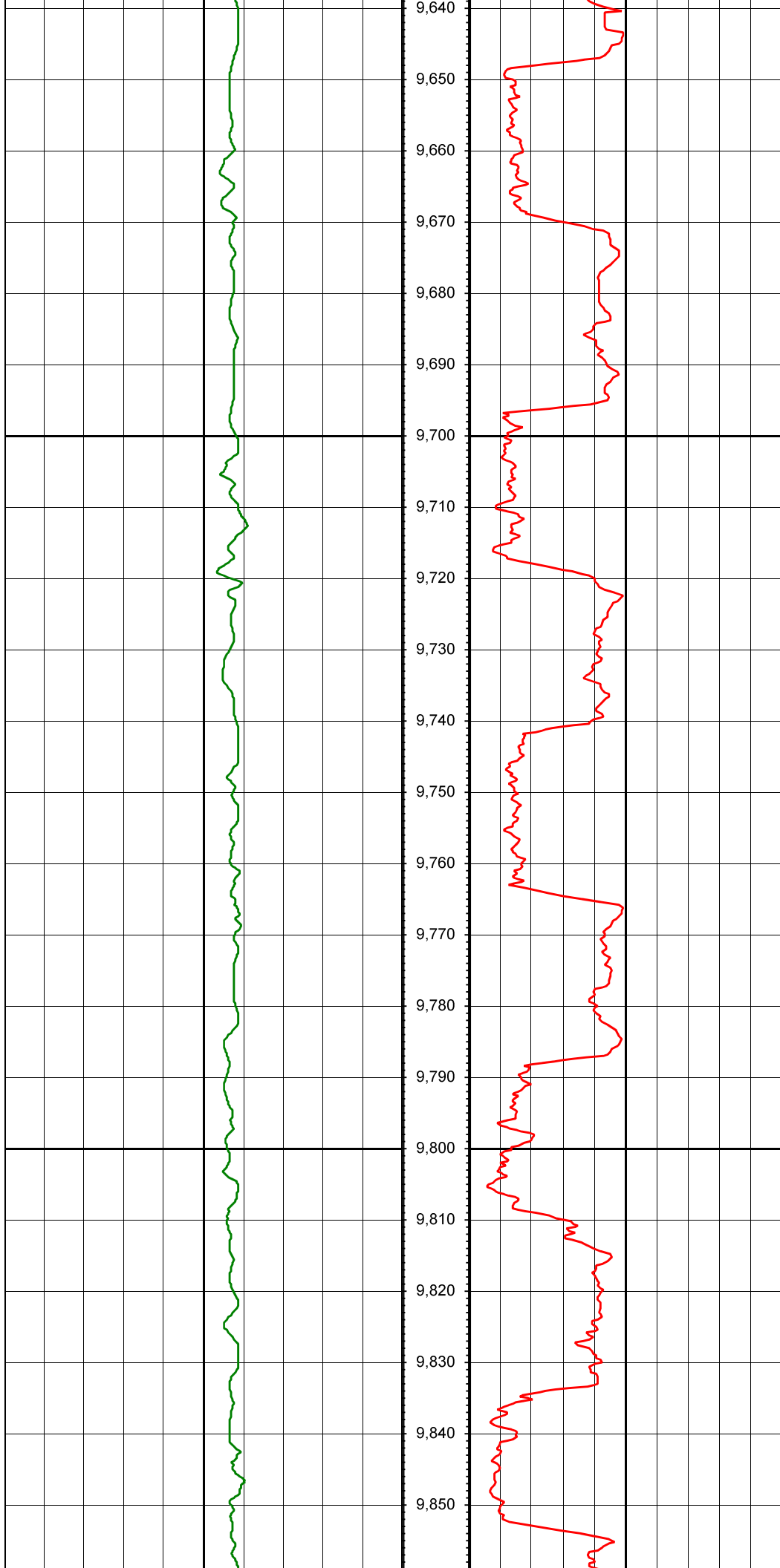


MD: 9032.00 INC: 92.30 AZ: 358.40

MD: 9125.00 INC: 89.70 AZ: 357.90



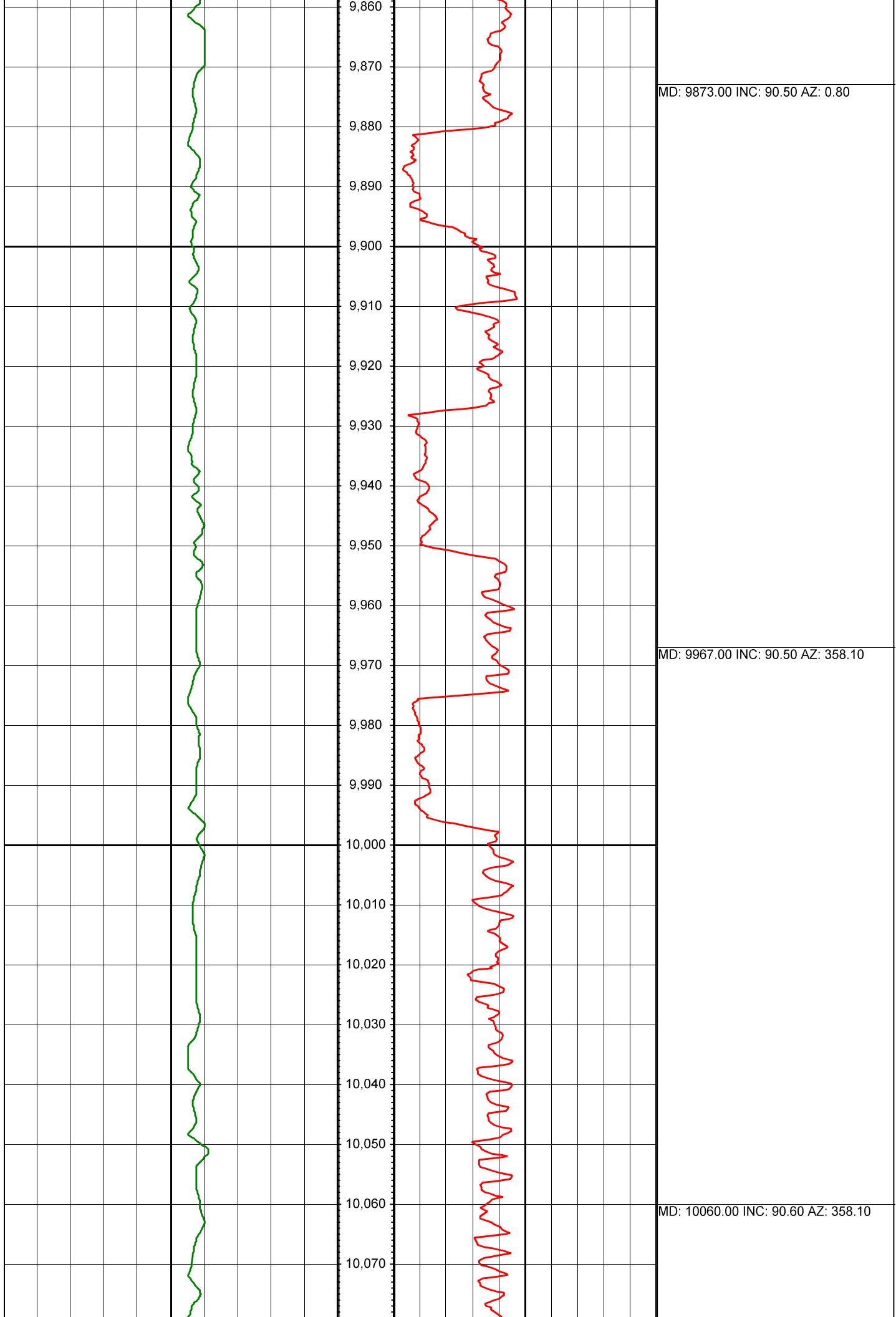


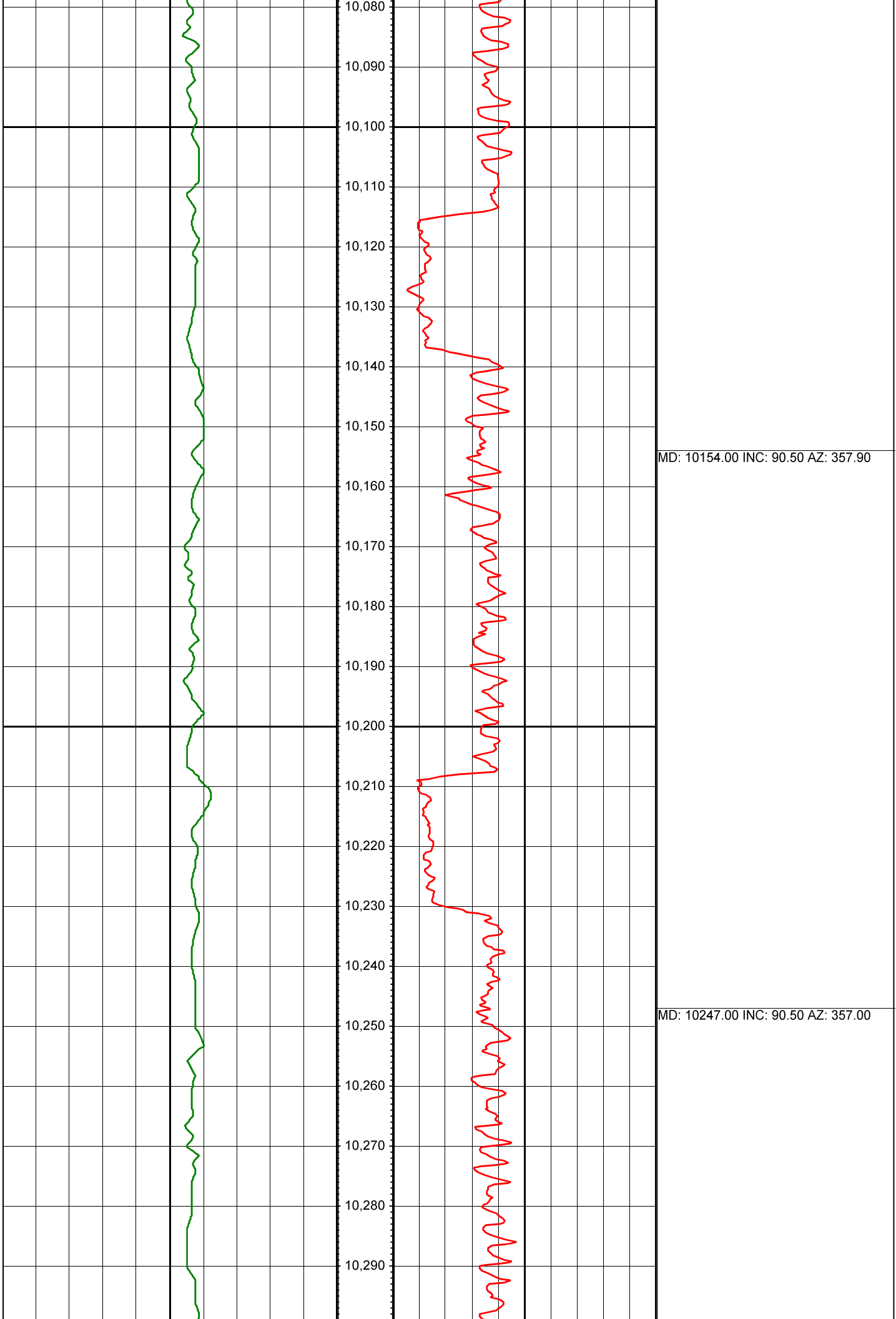


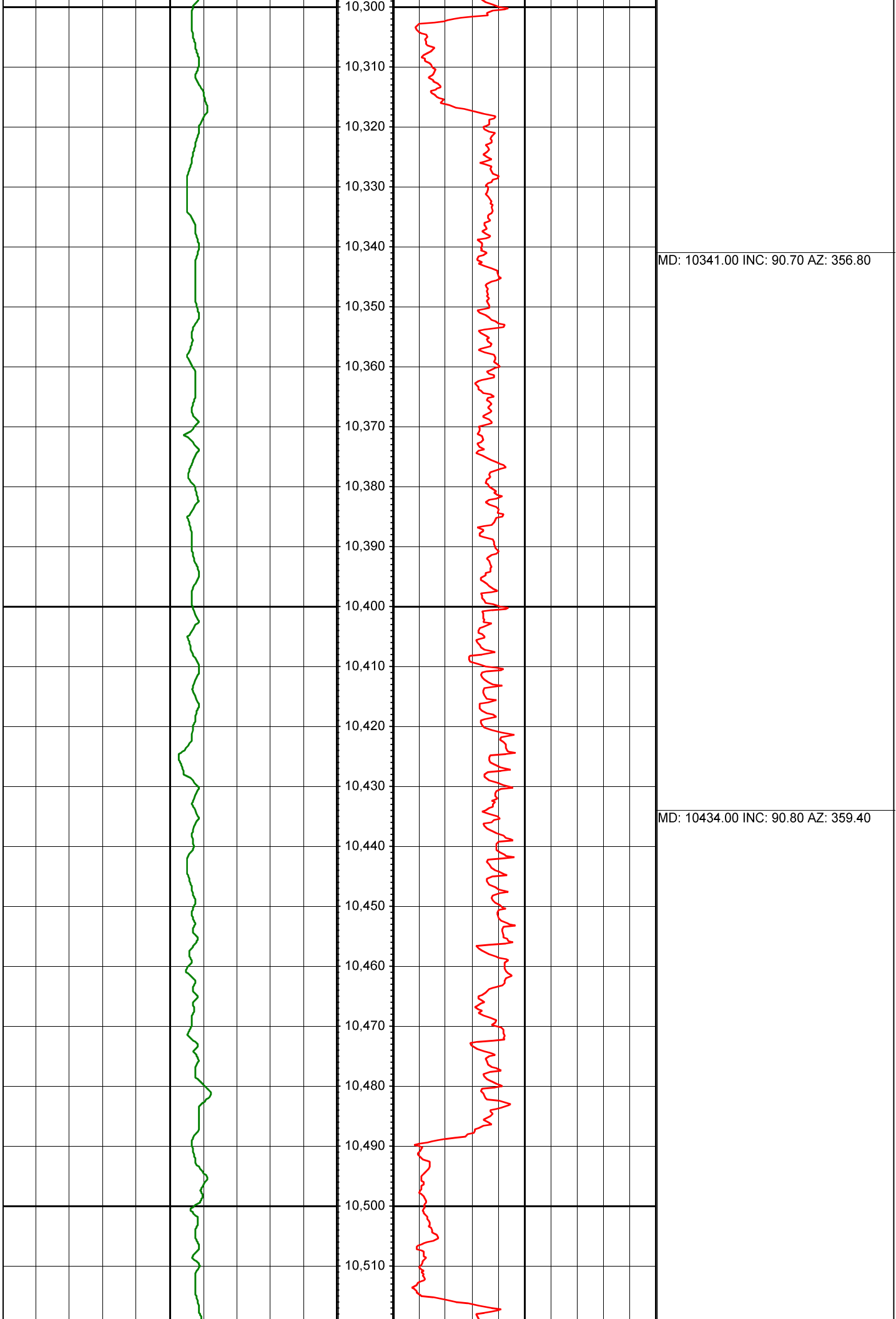
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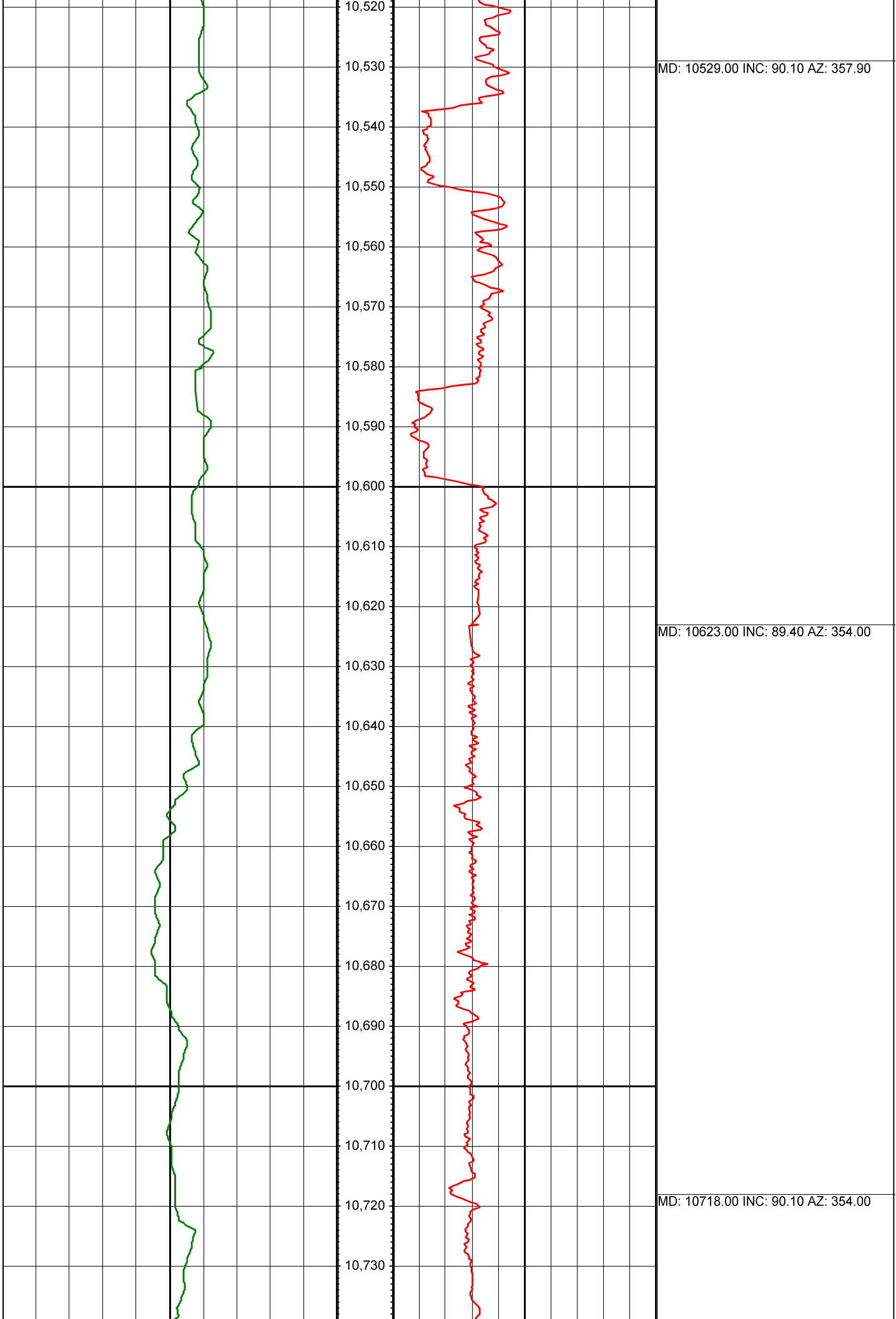
MD: 9686.00 INC: 90.60 AZ: 2.40

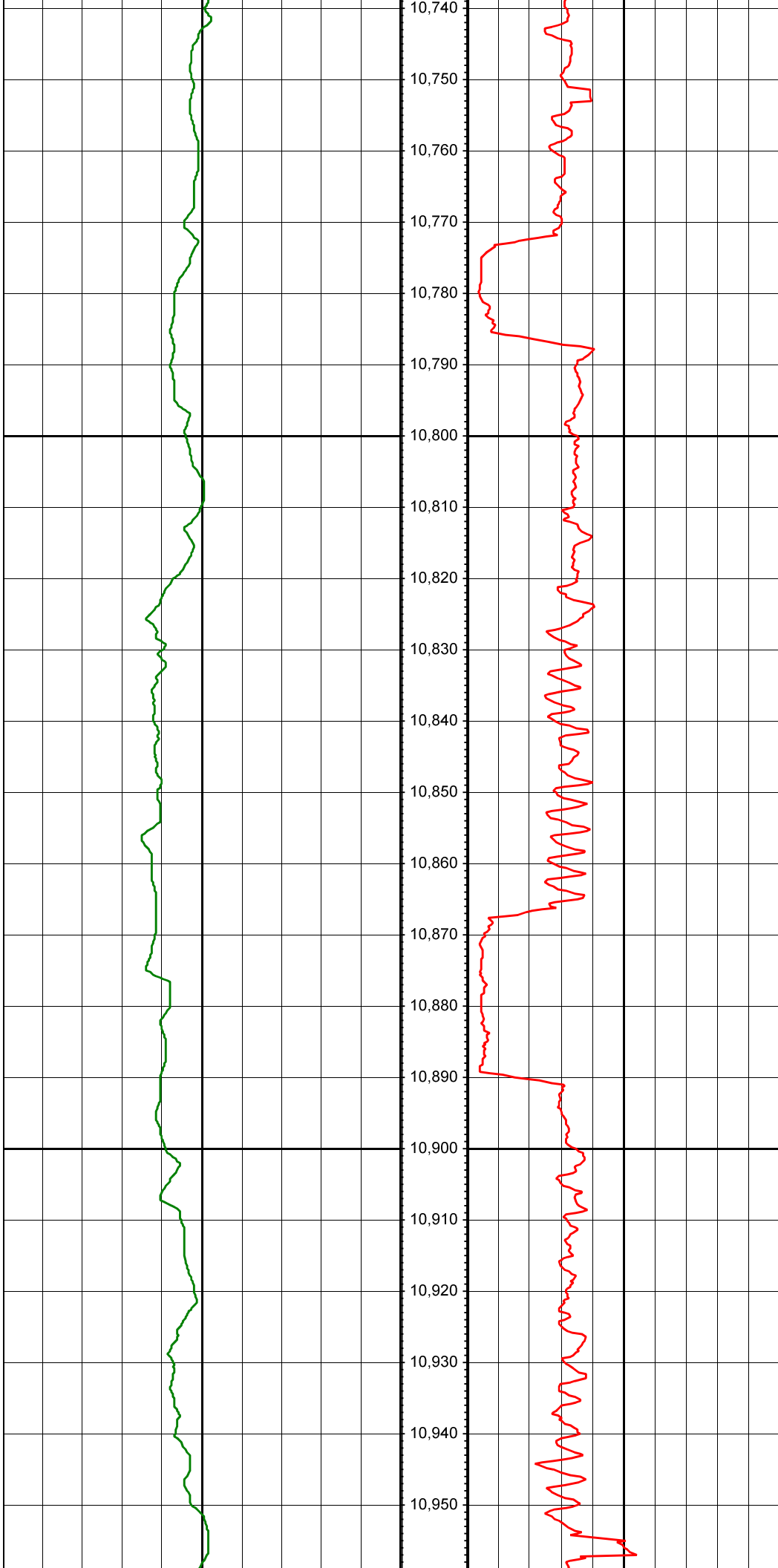
MD: 9780.00 INC: 90.30 AZ: 0.20







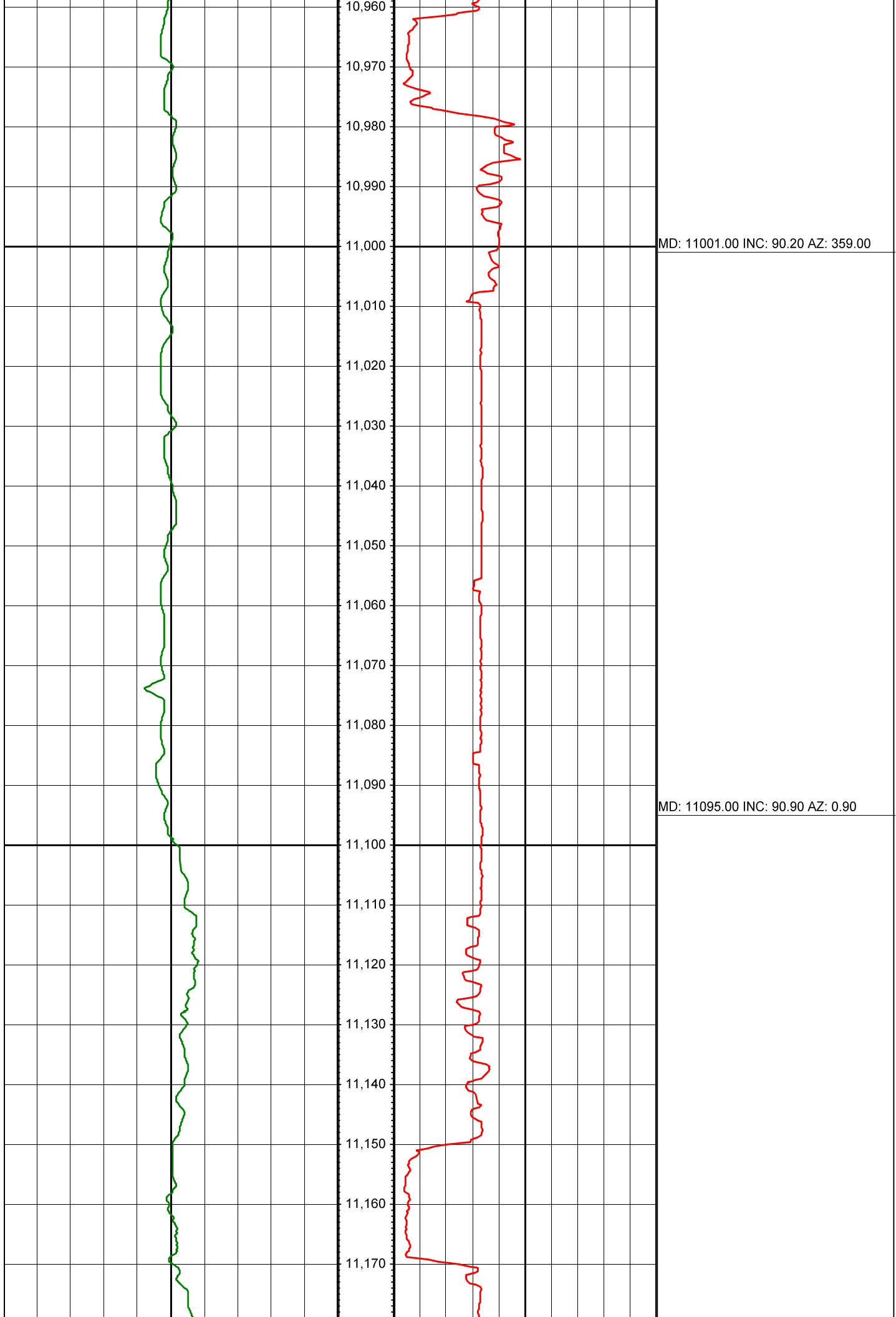


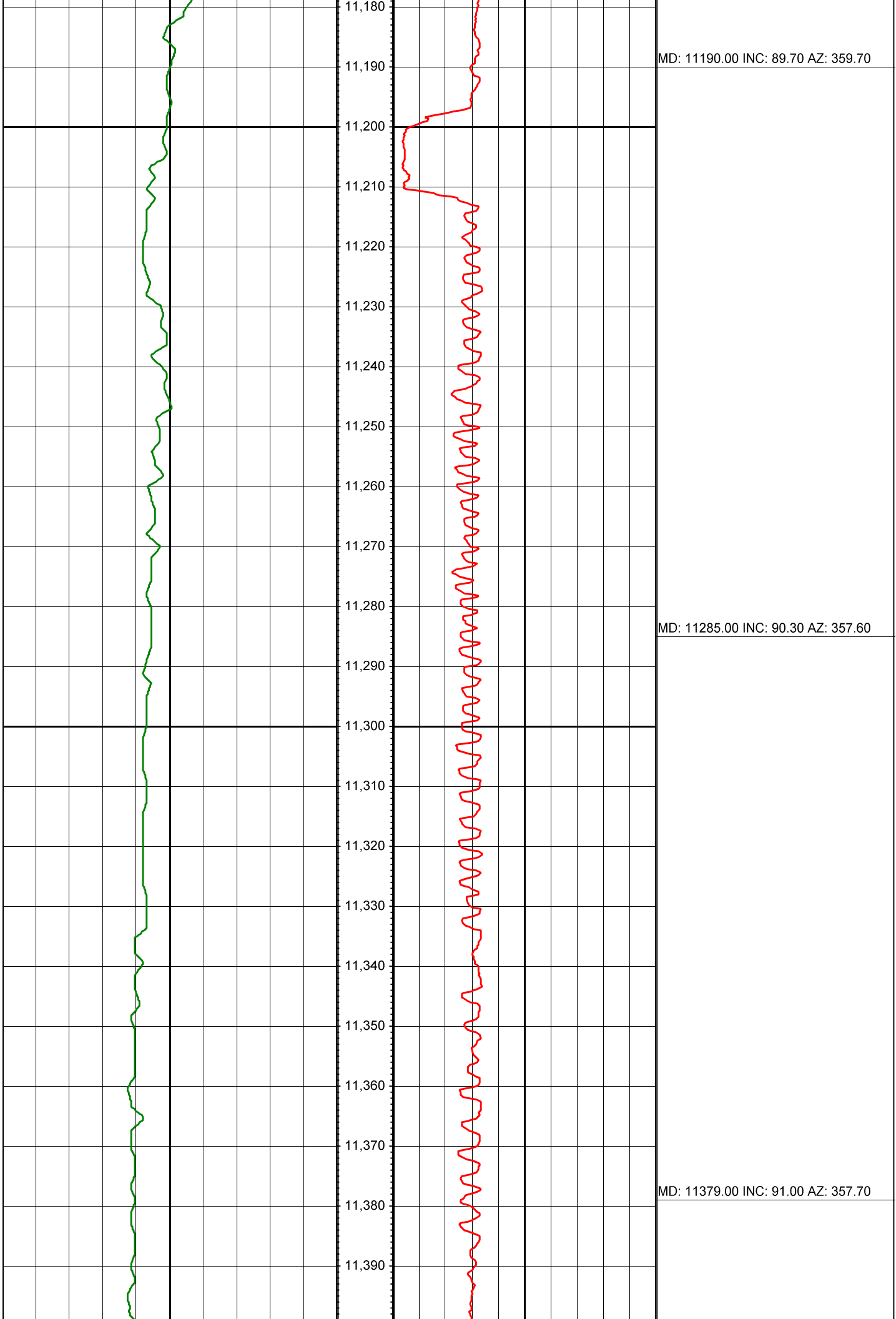


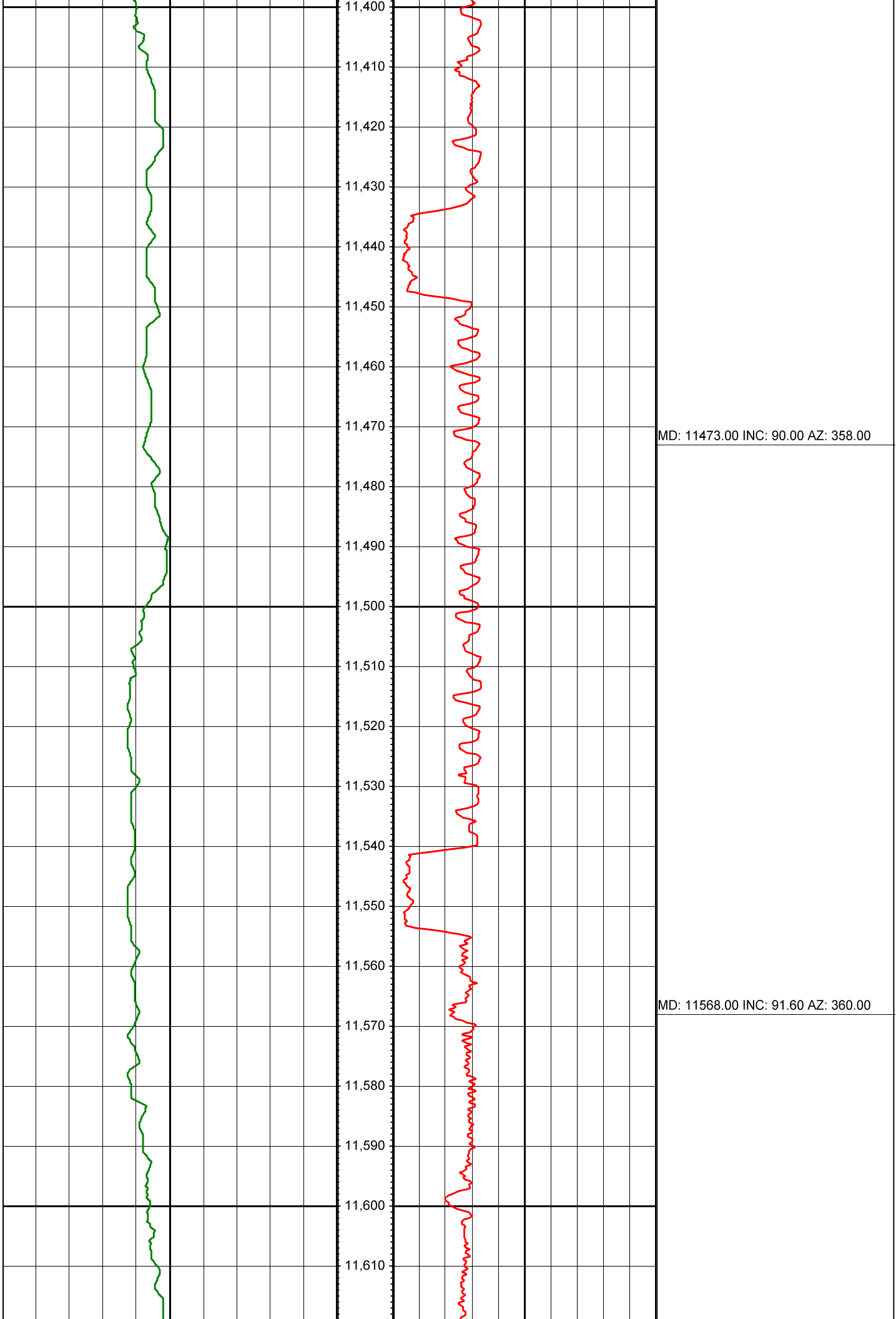
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MD: 10812.00 INC: 90.50 AZ: 355.50

MD: 10906.00 INC: 92.10 AZ: 358.80



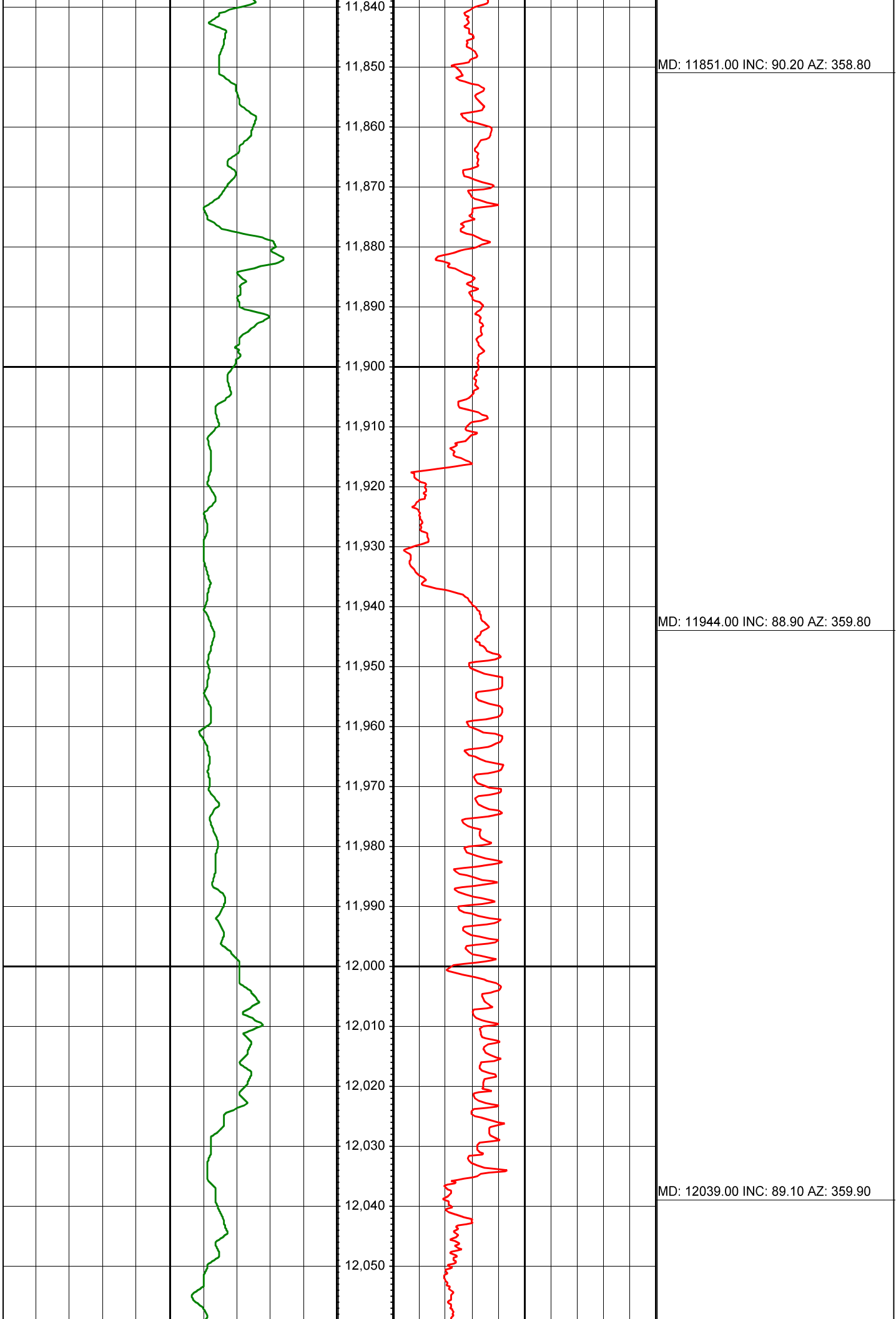


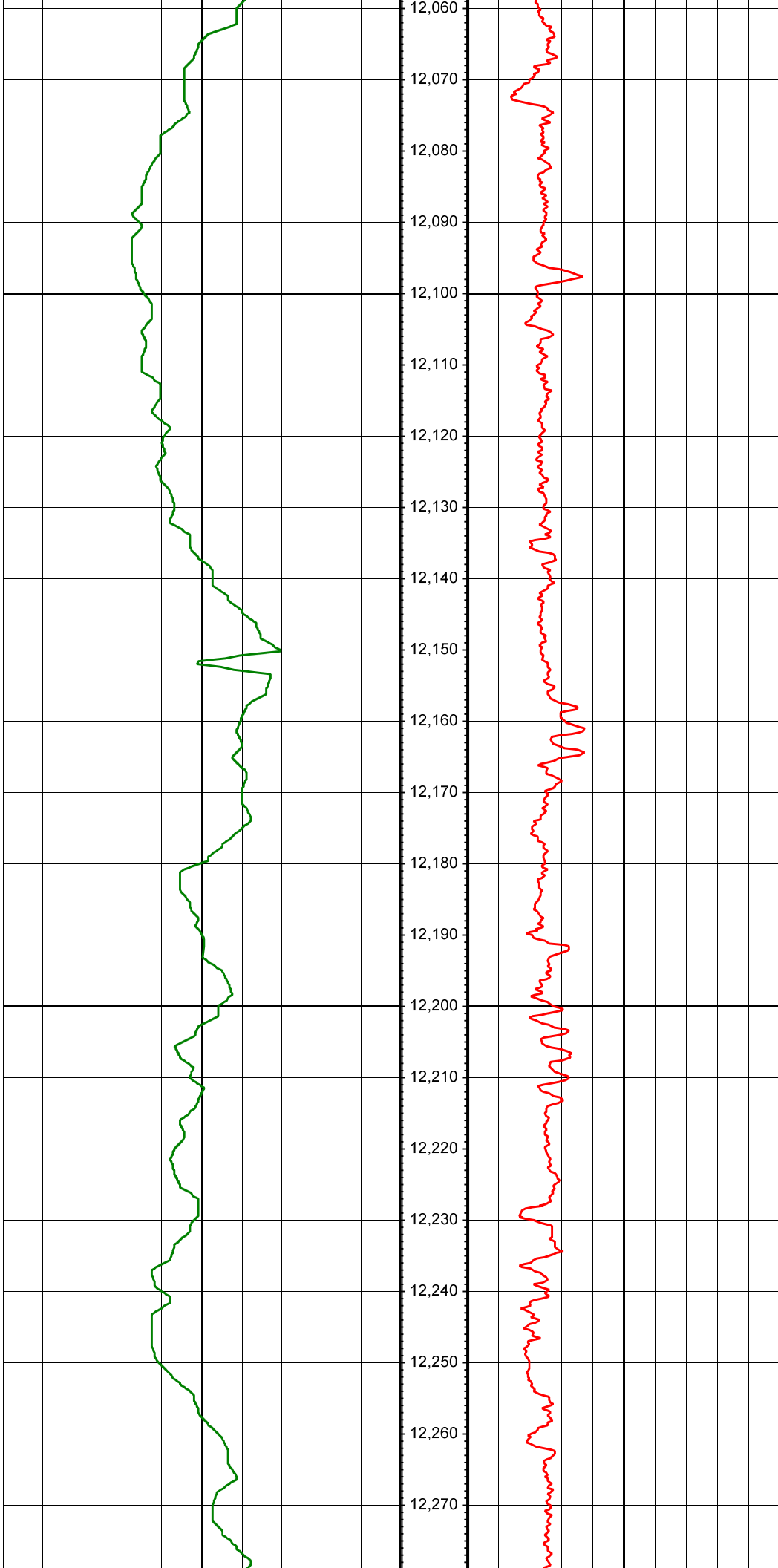




MD: 11662.00 INC: 91.30 AZ: 359.10

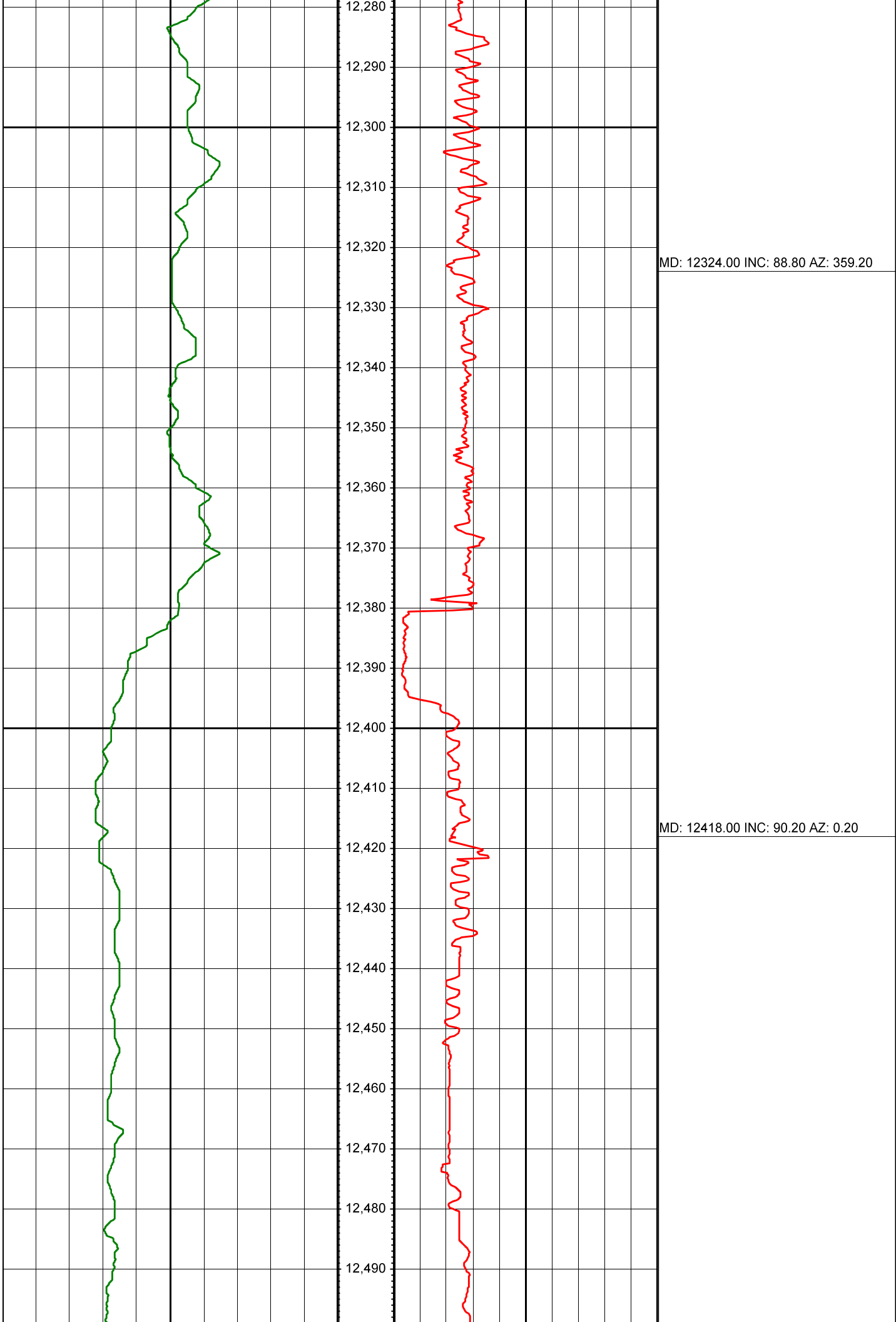
MD: 11757.00 INC: 89.00 AZ: 359.40

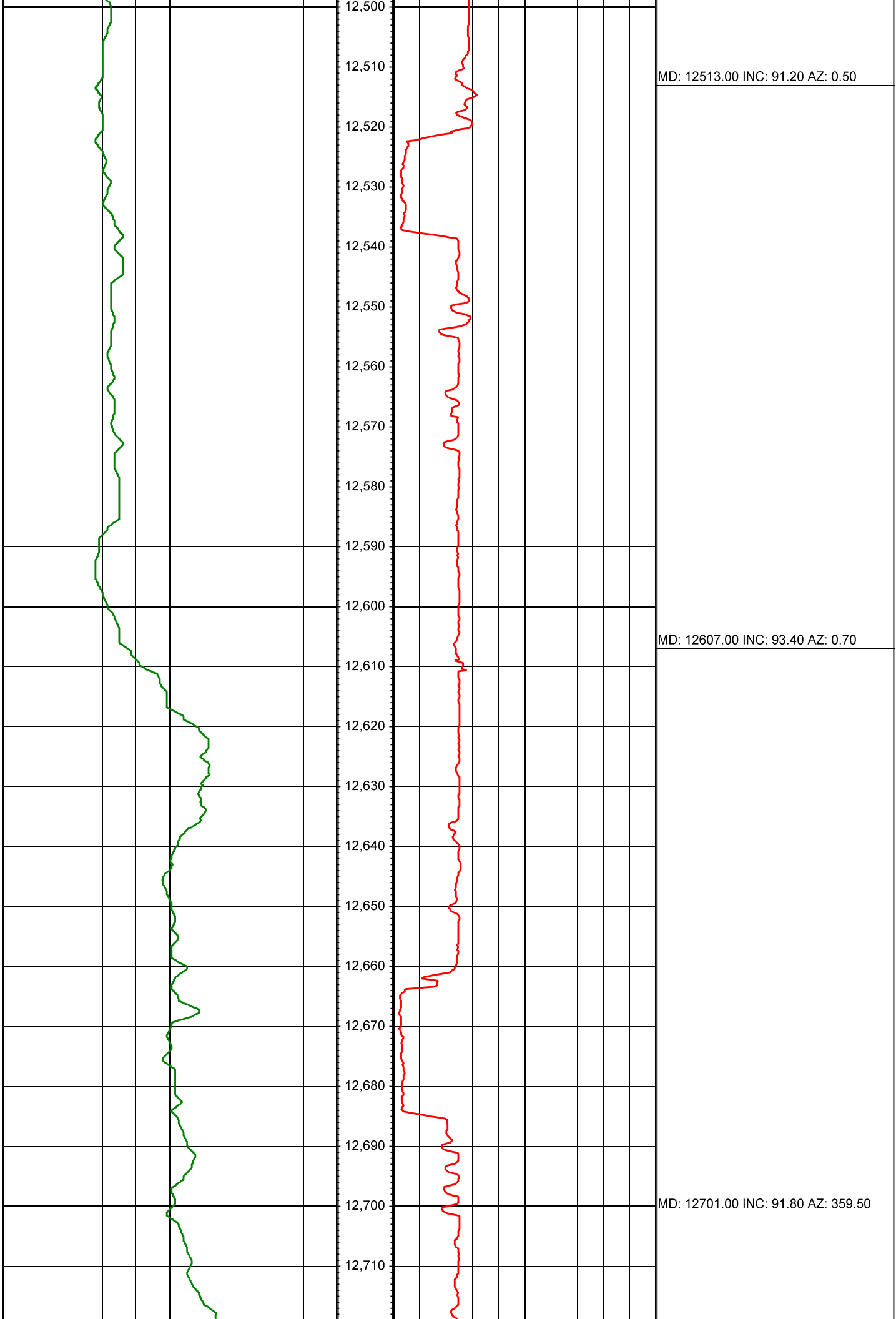


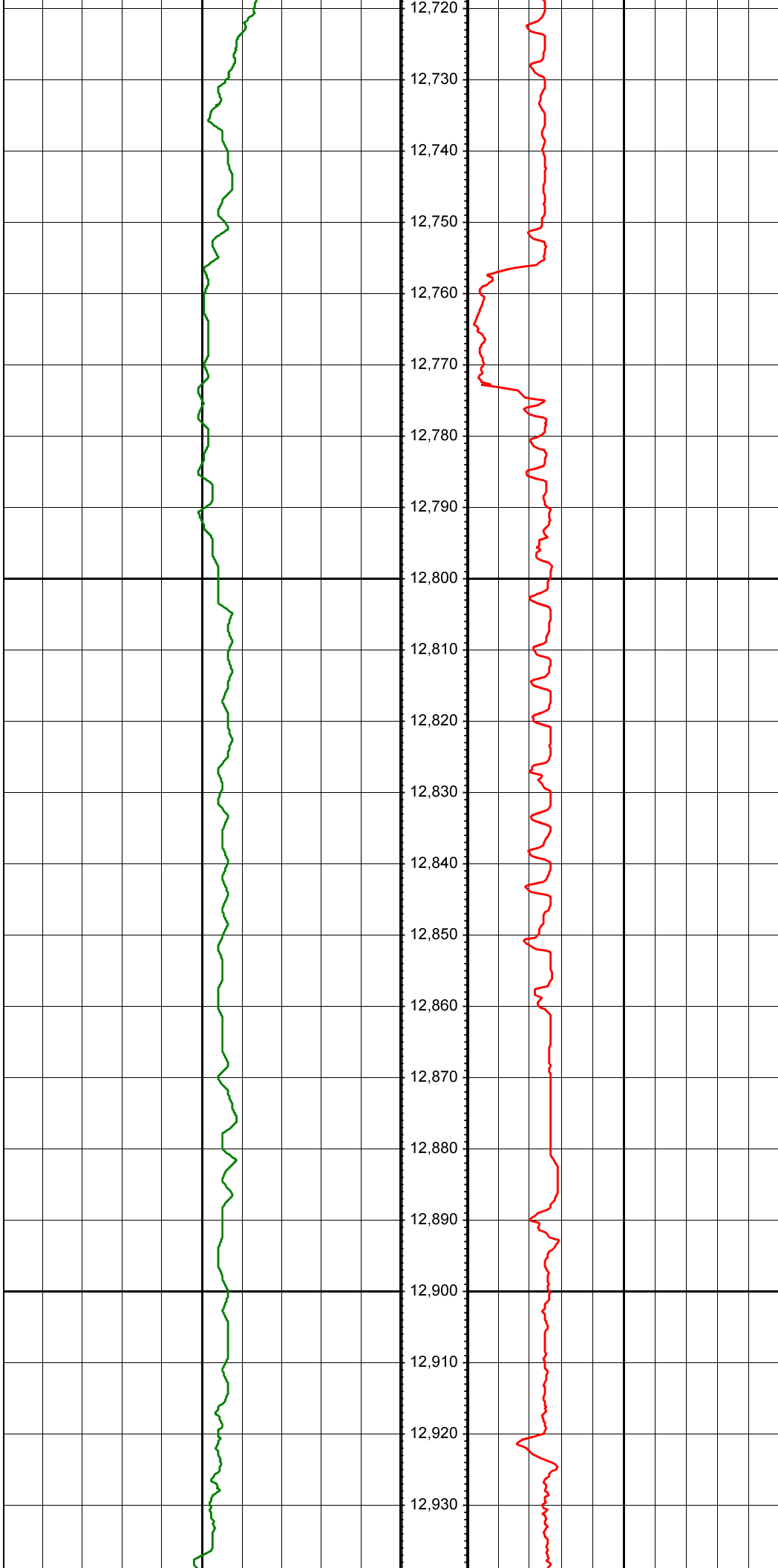


MD: 12134.00 INC: 89.30 AZ: 359.30

MD: 12229.00 INC: 89.00 AZ: 359.30



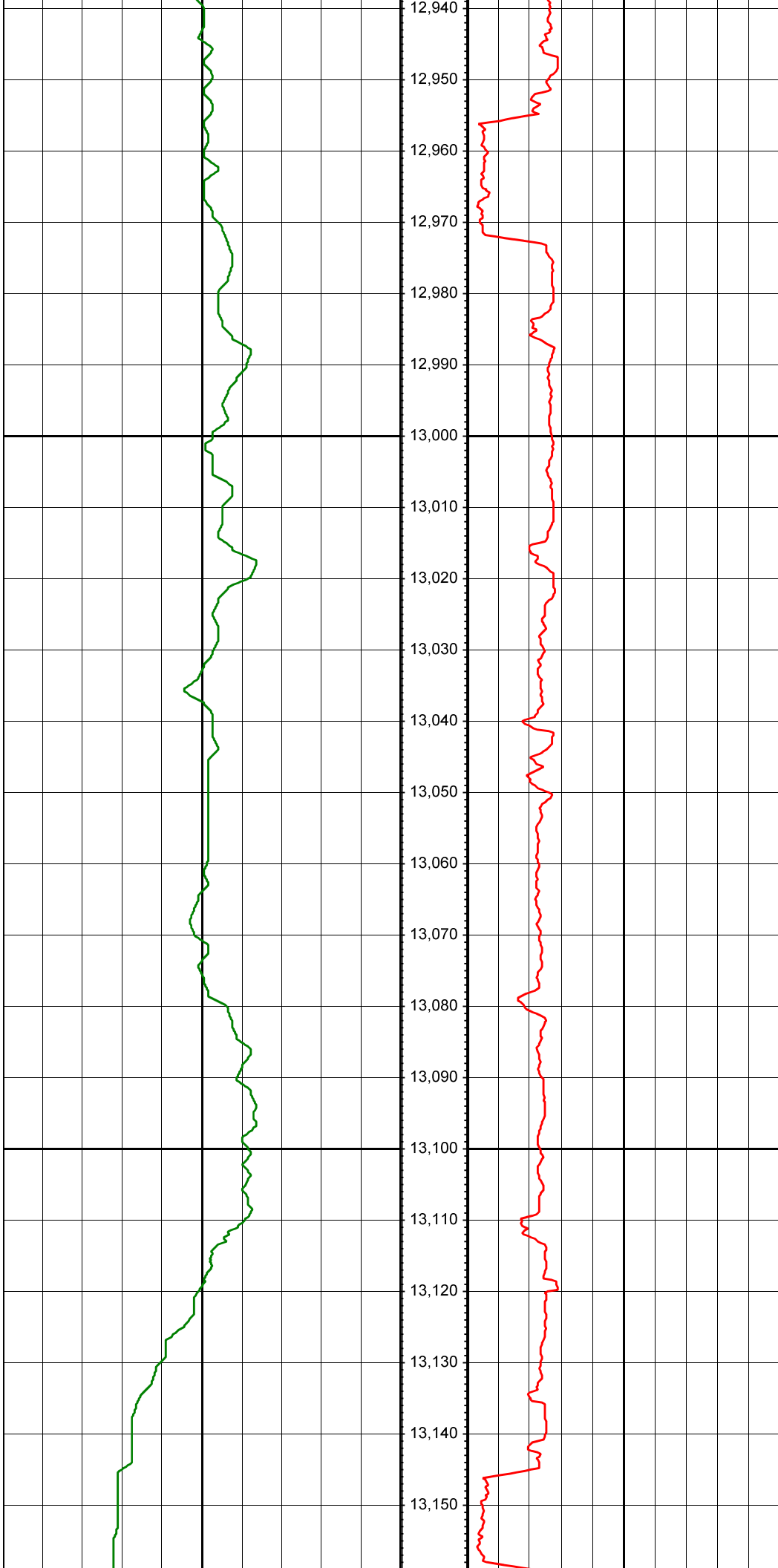




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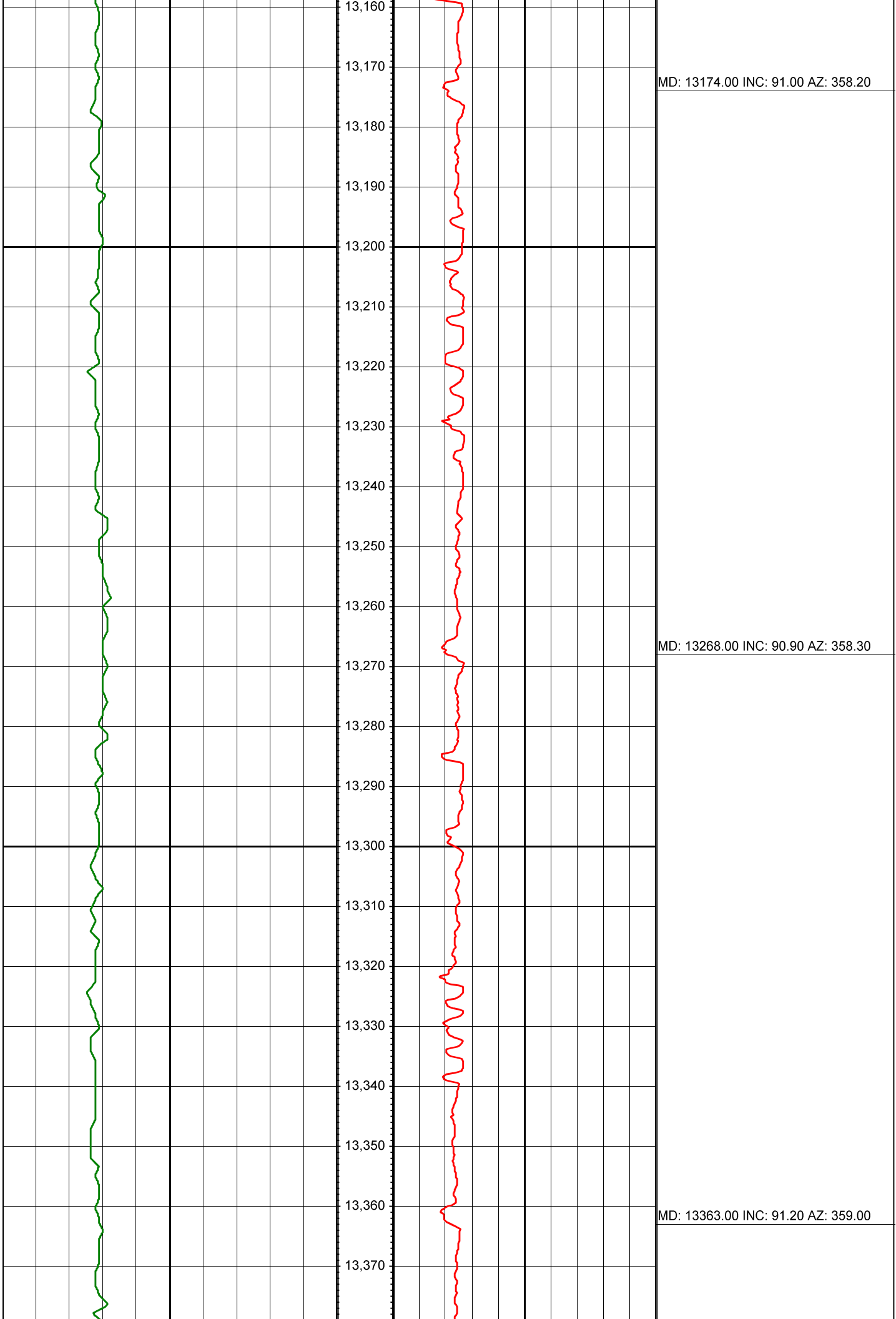
MD: 12796.00 INC: 89.80 AZ: 359.70

MD: 12890.00 INC: 91.00 AZ: 0.30



MD: 12984.00 INC: 89.50 AZ: 358.50

MD: 13079.00 INC: 89.20 AZ: 358.30

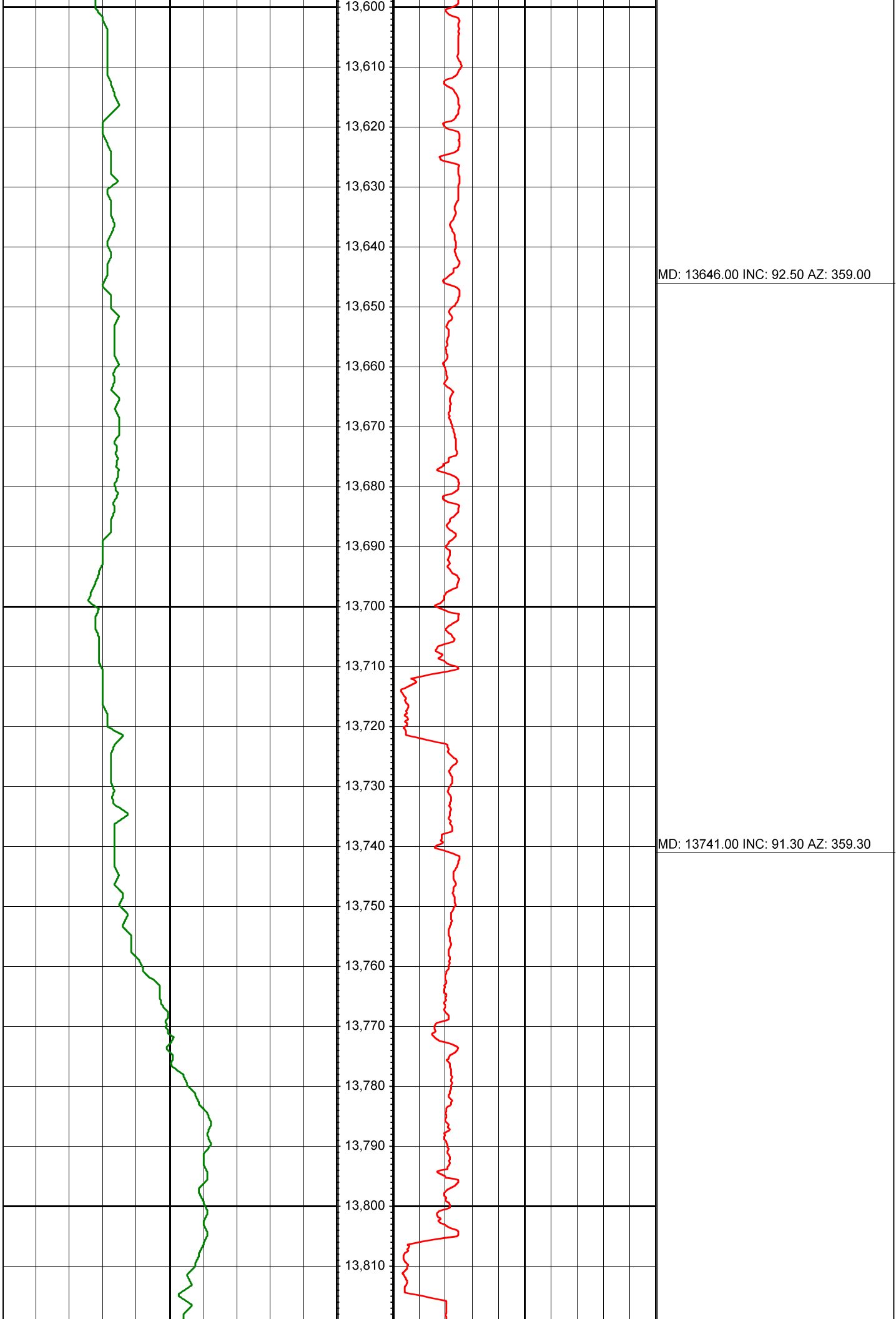


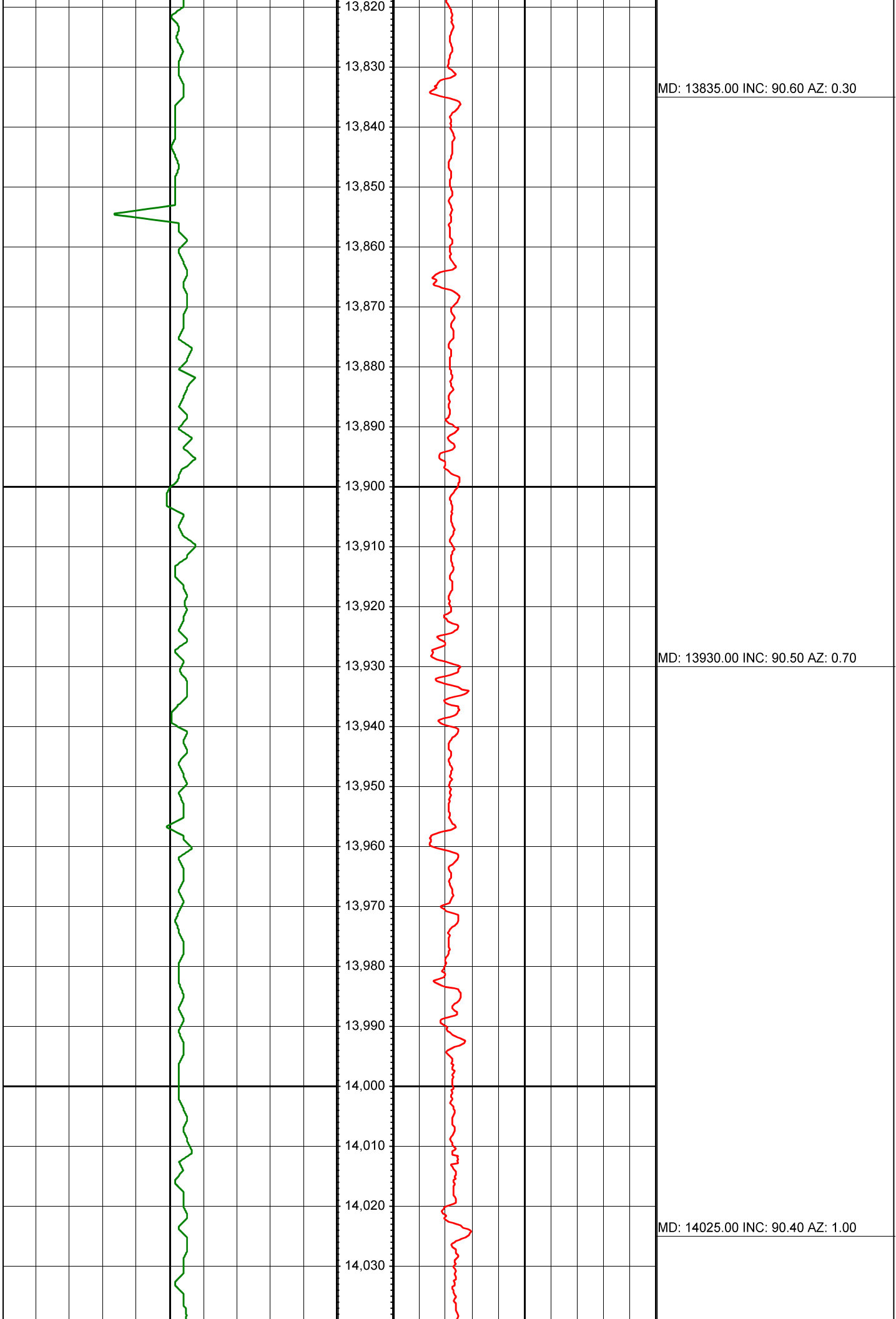


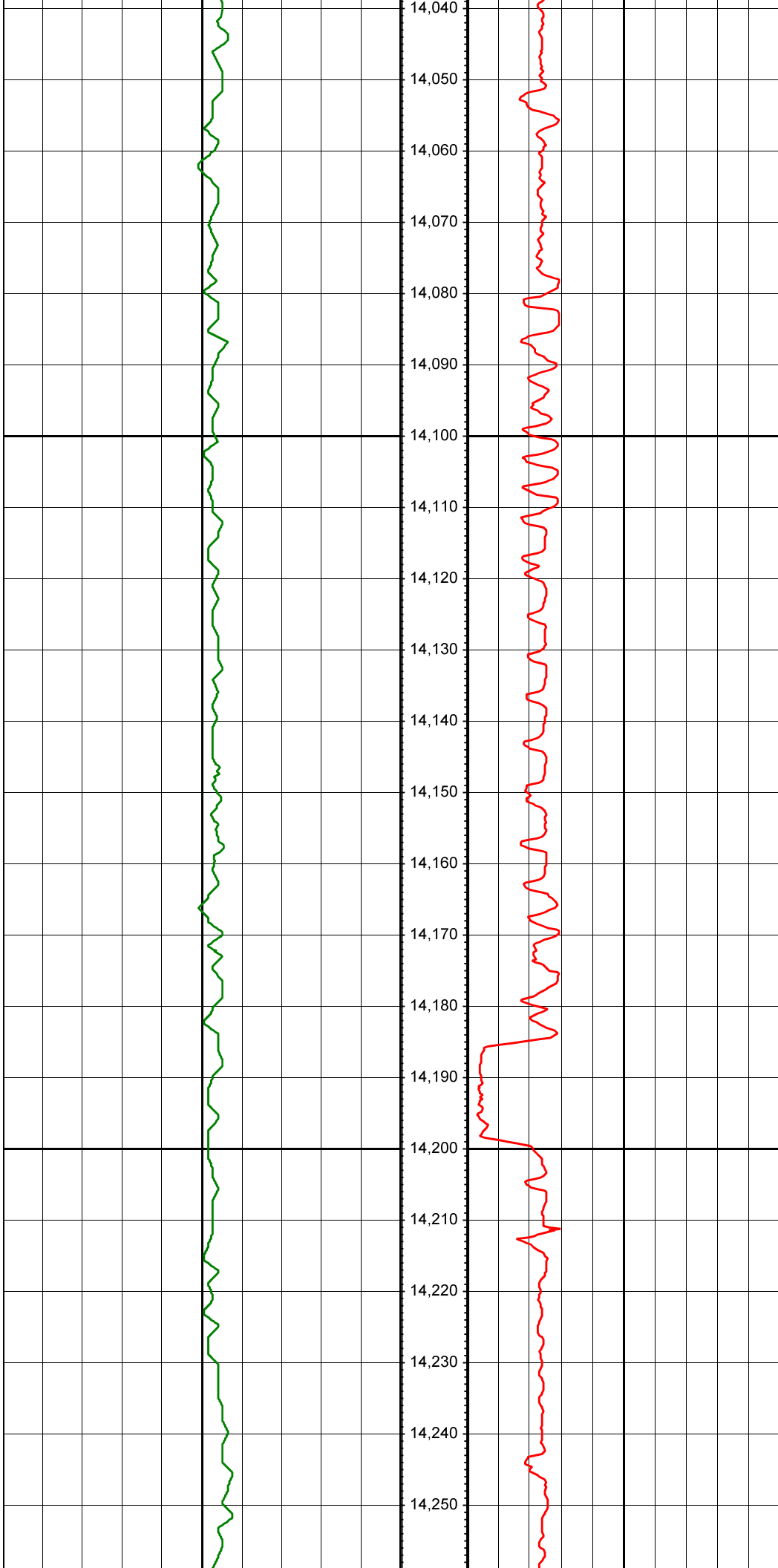
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MD: 13457.00 INC: 88.70 AZ: 359.30

MD: 13551.00 INC: 88.70 AZ: 358.60



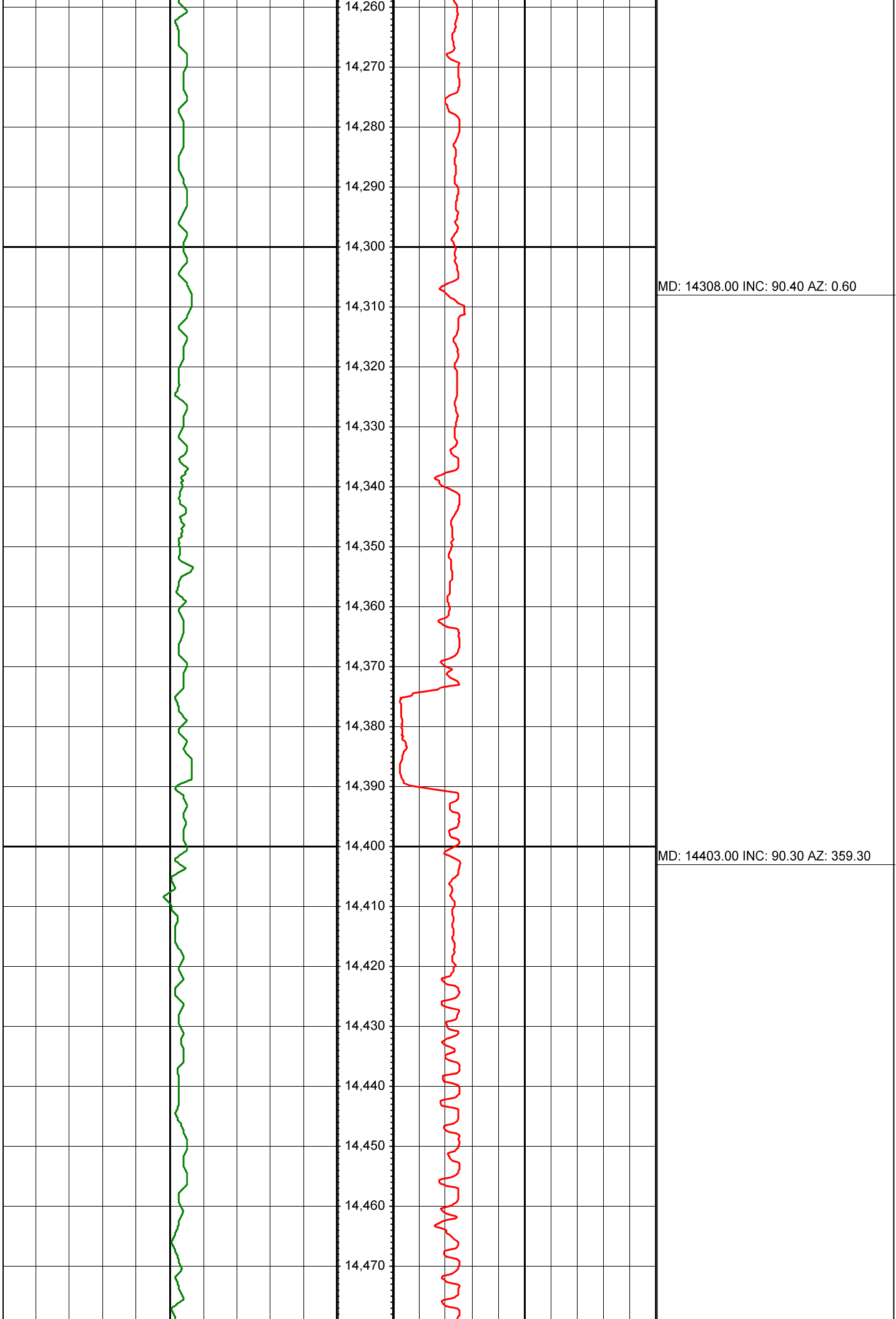


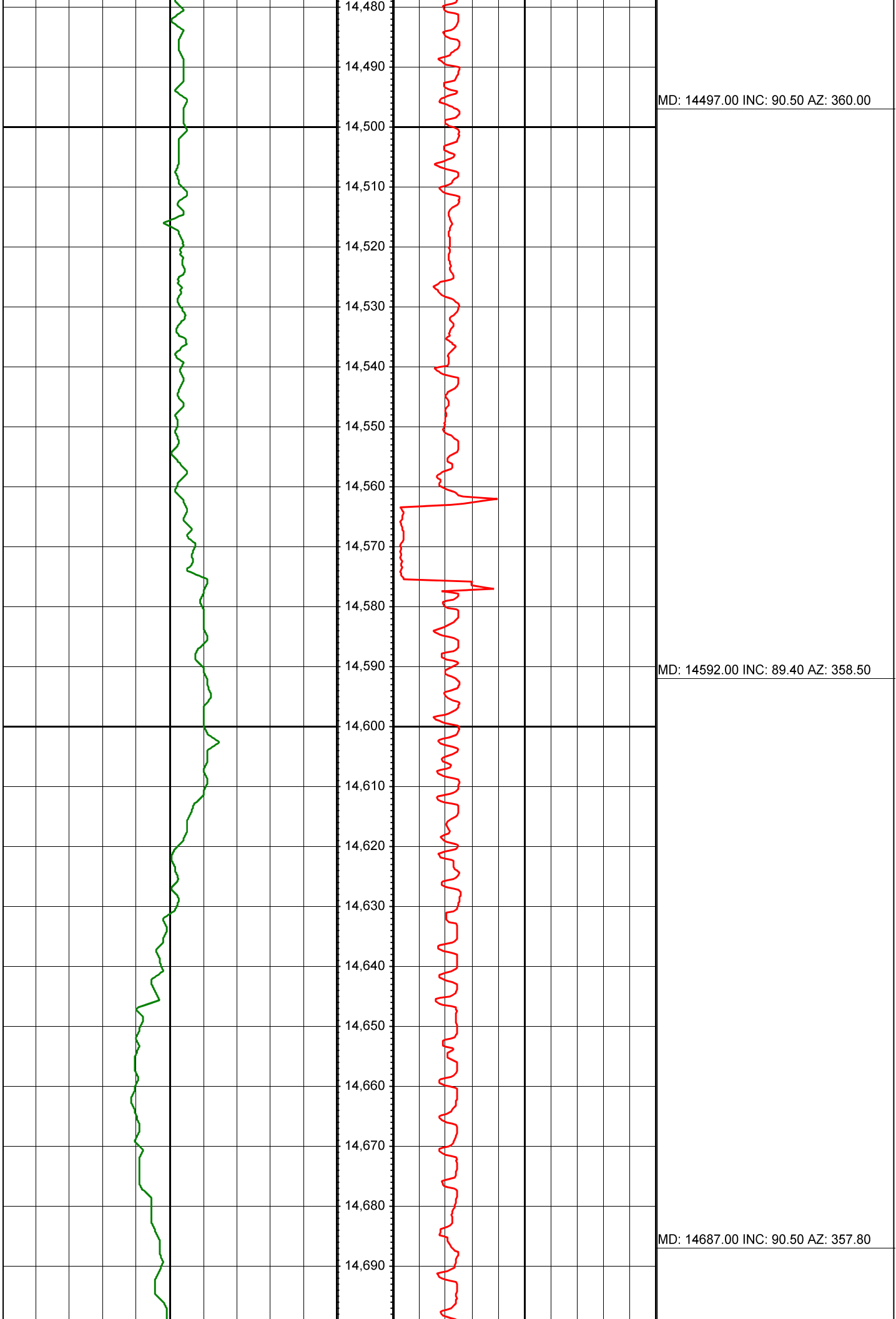


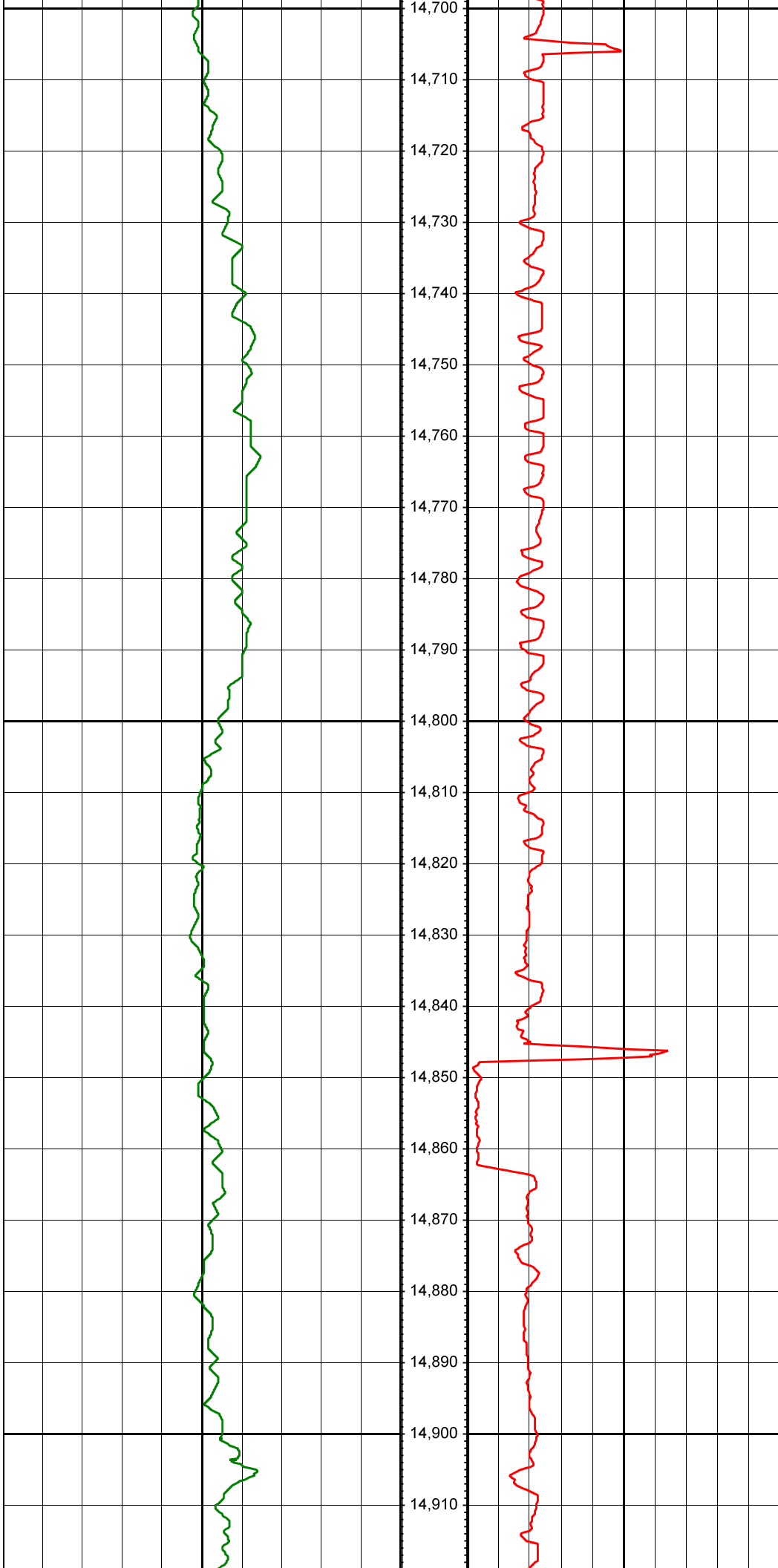
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MD: 14119.00 INC: 90.20 AZ: 1.40

MD: 14214.00 INC: 90.20 AZ: 360.00



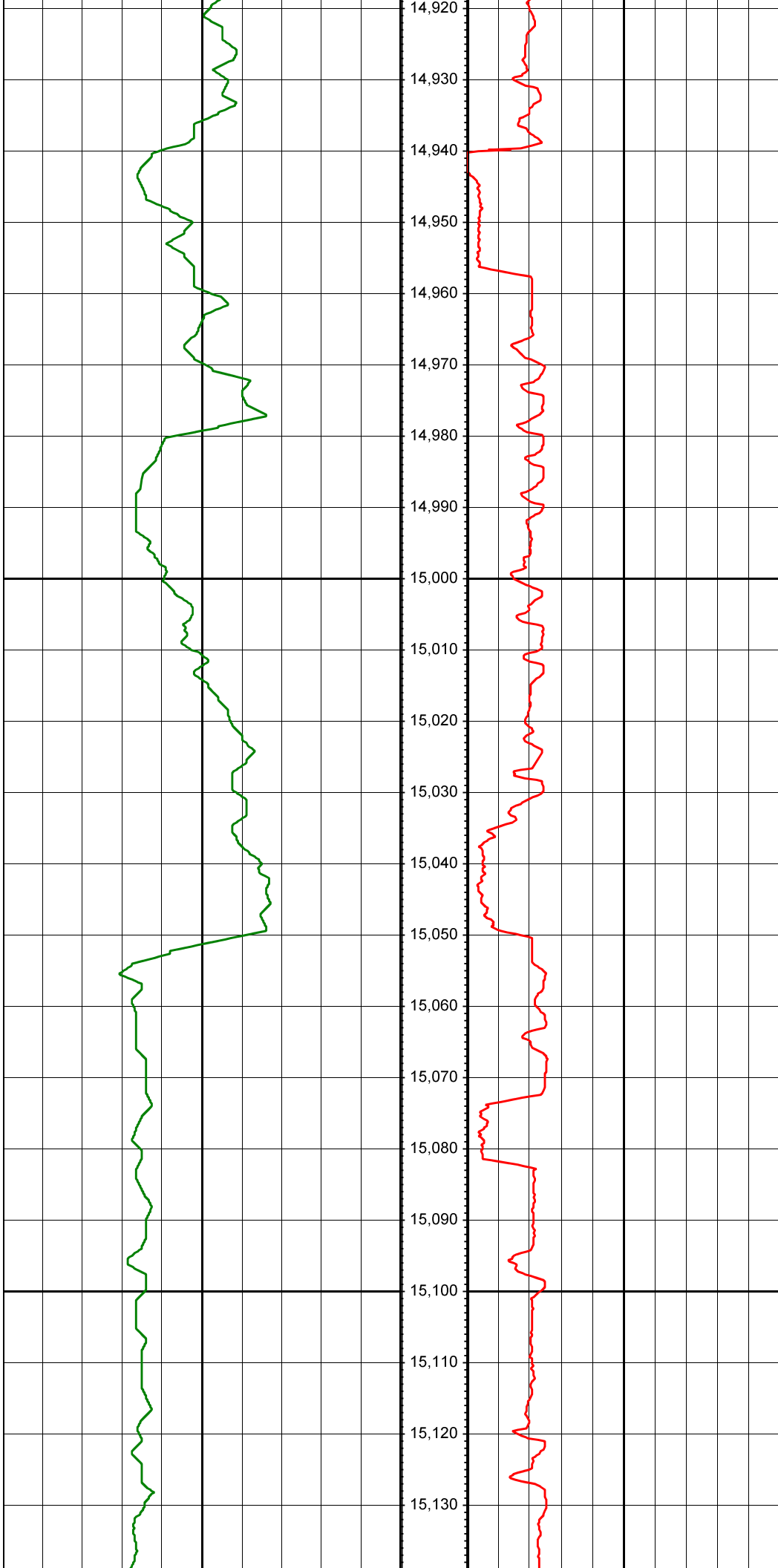




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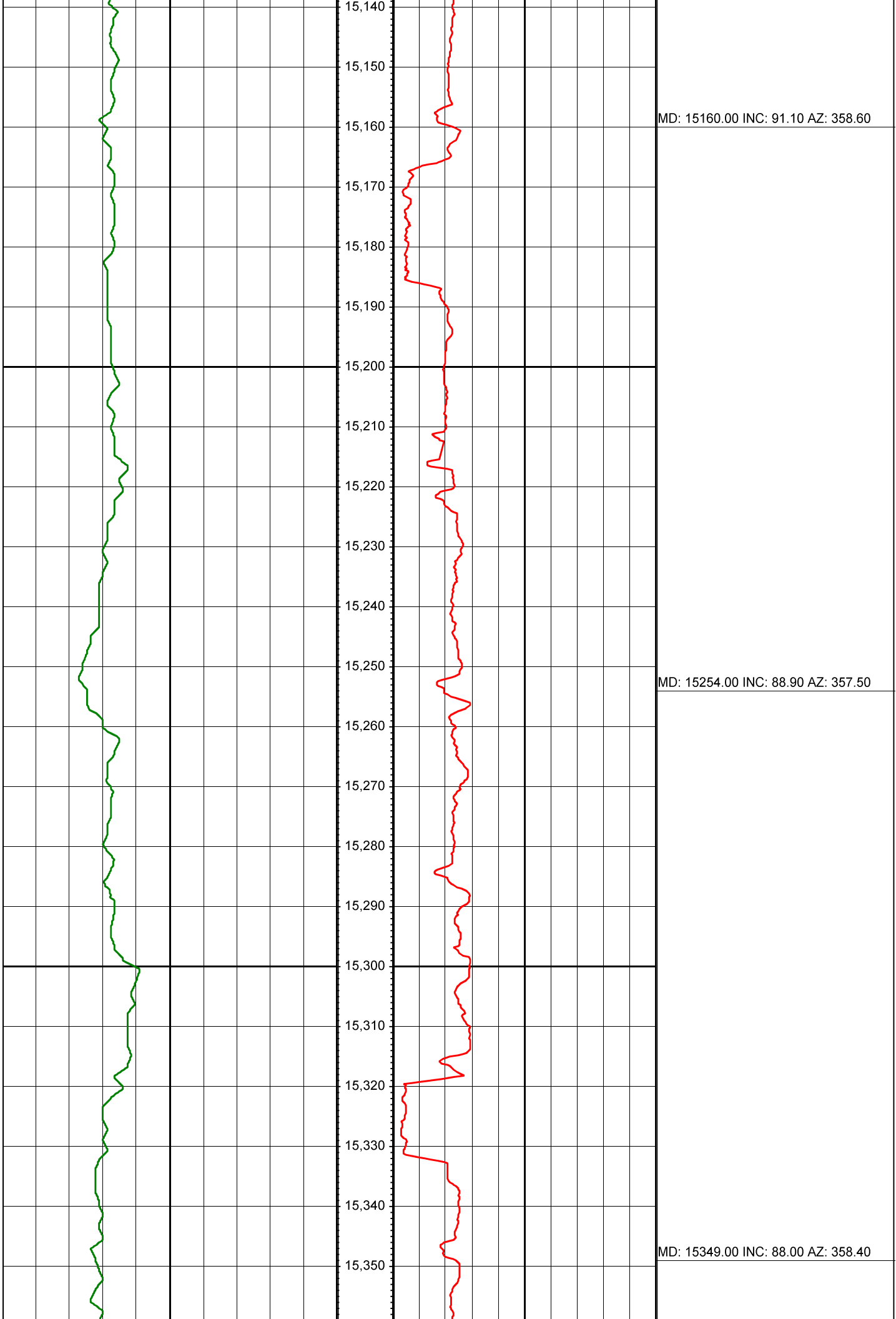
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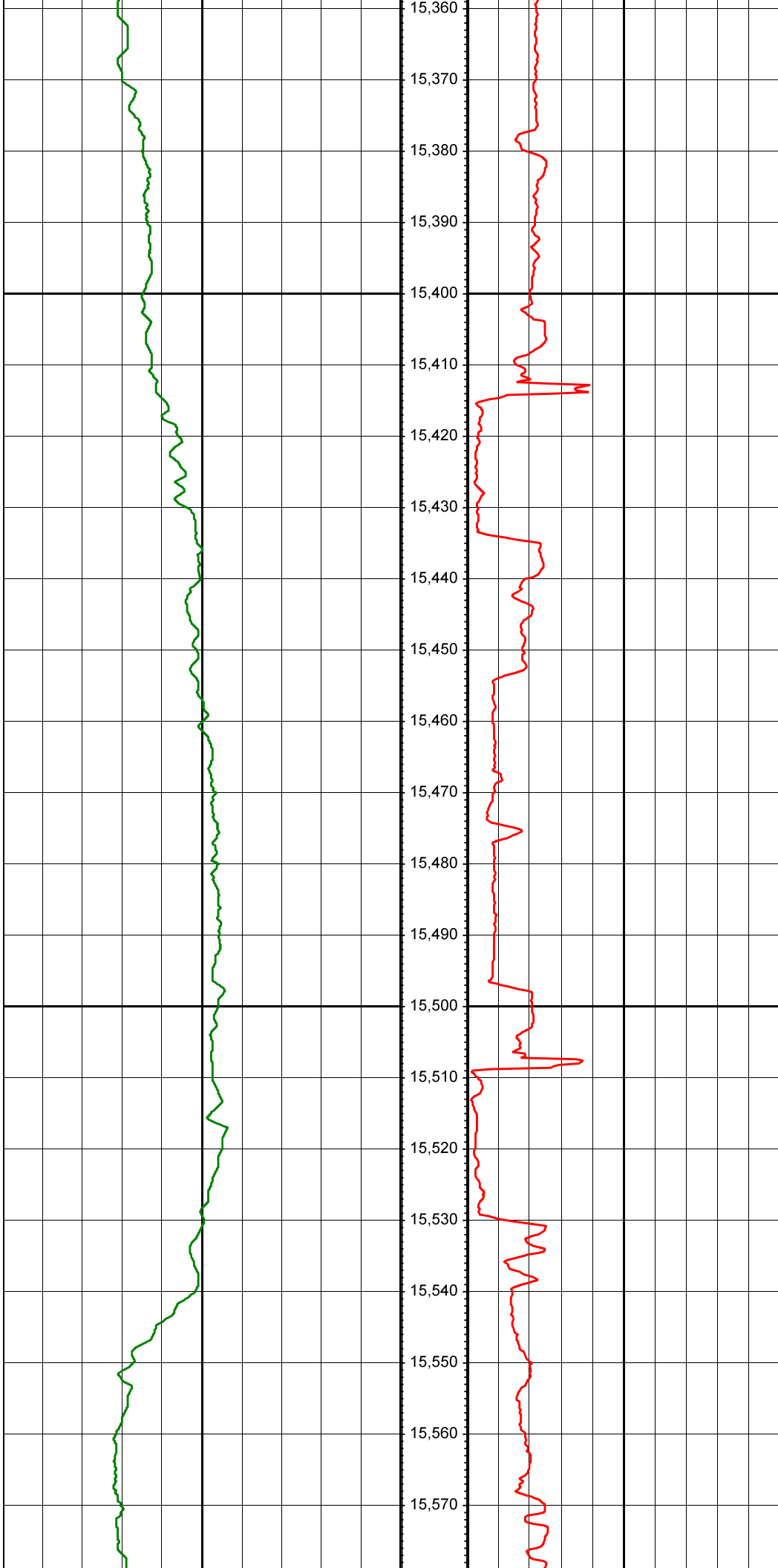
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MD: 14971.00 INC: 91.10 AZ: 358.90

MD: 15066.00 INC: 90.60 AZ: 359.70





MD: 15443.00 INC: 88.40 AZ: 358.20

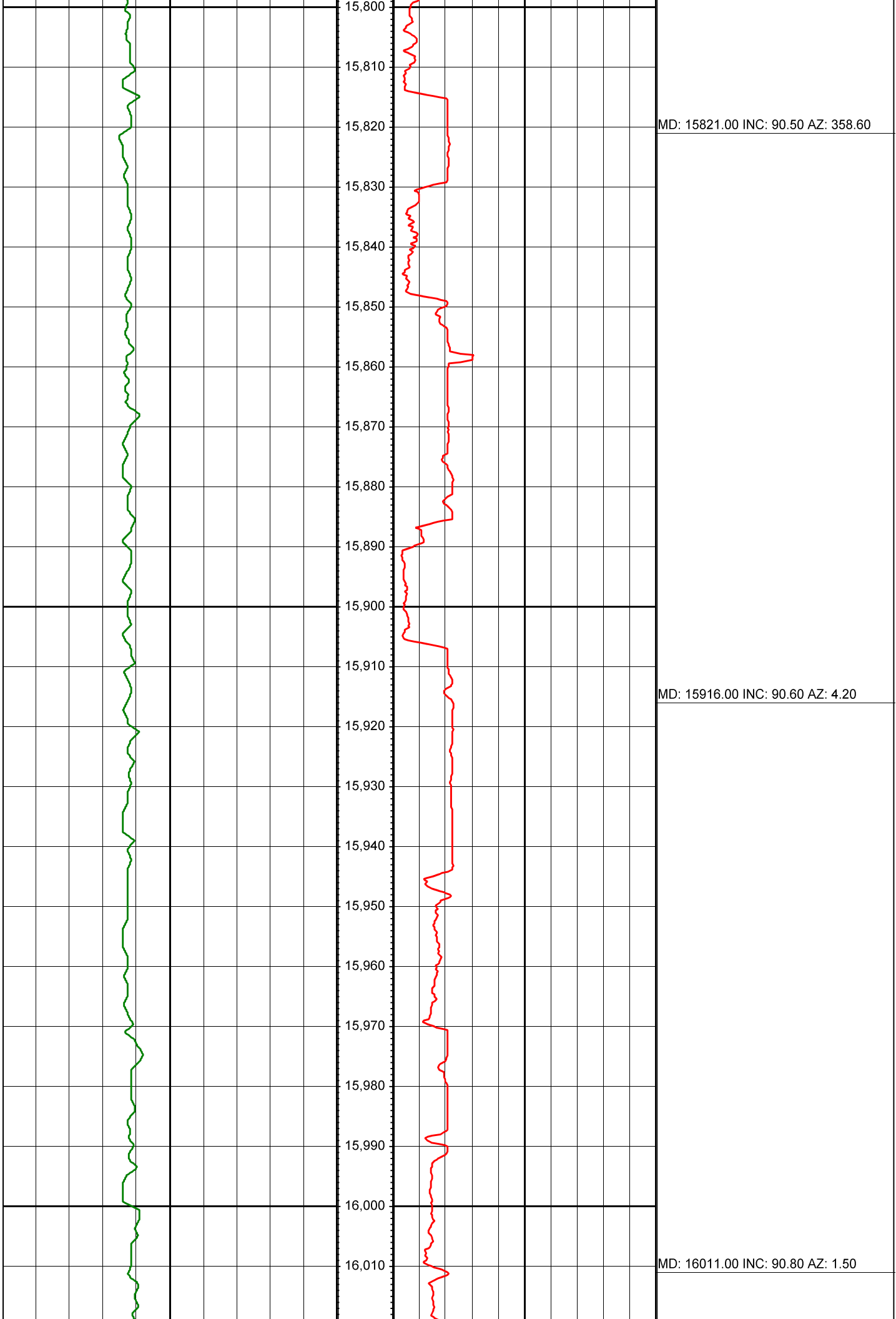
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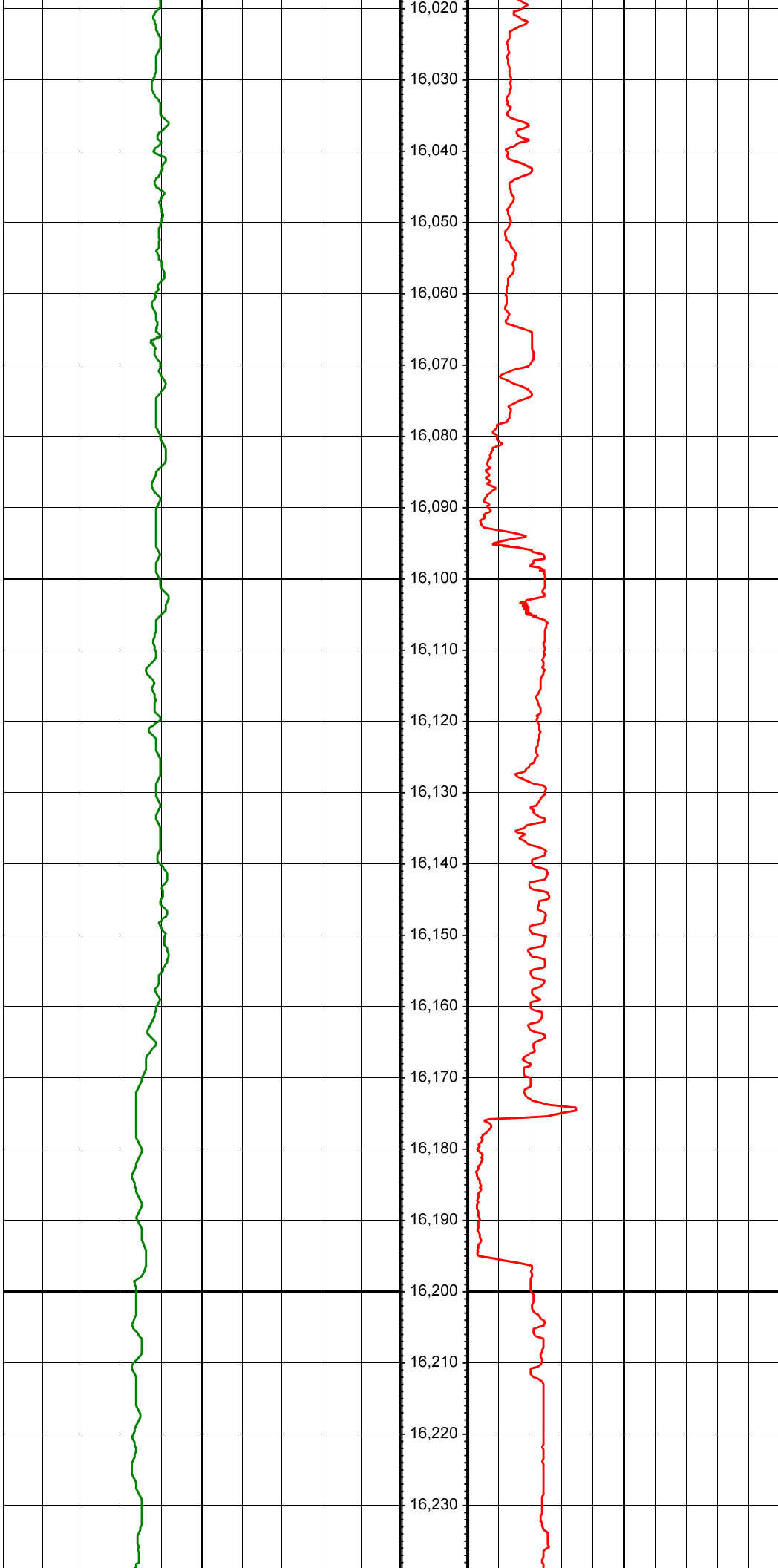


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MD: 15633.00 INC: 90.00 AZ: 358.80

MD: 15727.00 INC: 90.50 AZ: 358.70

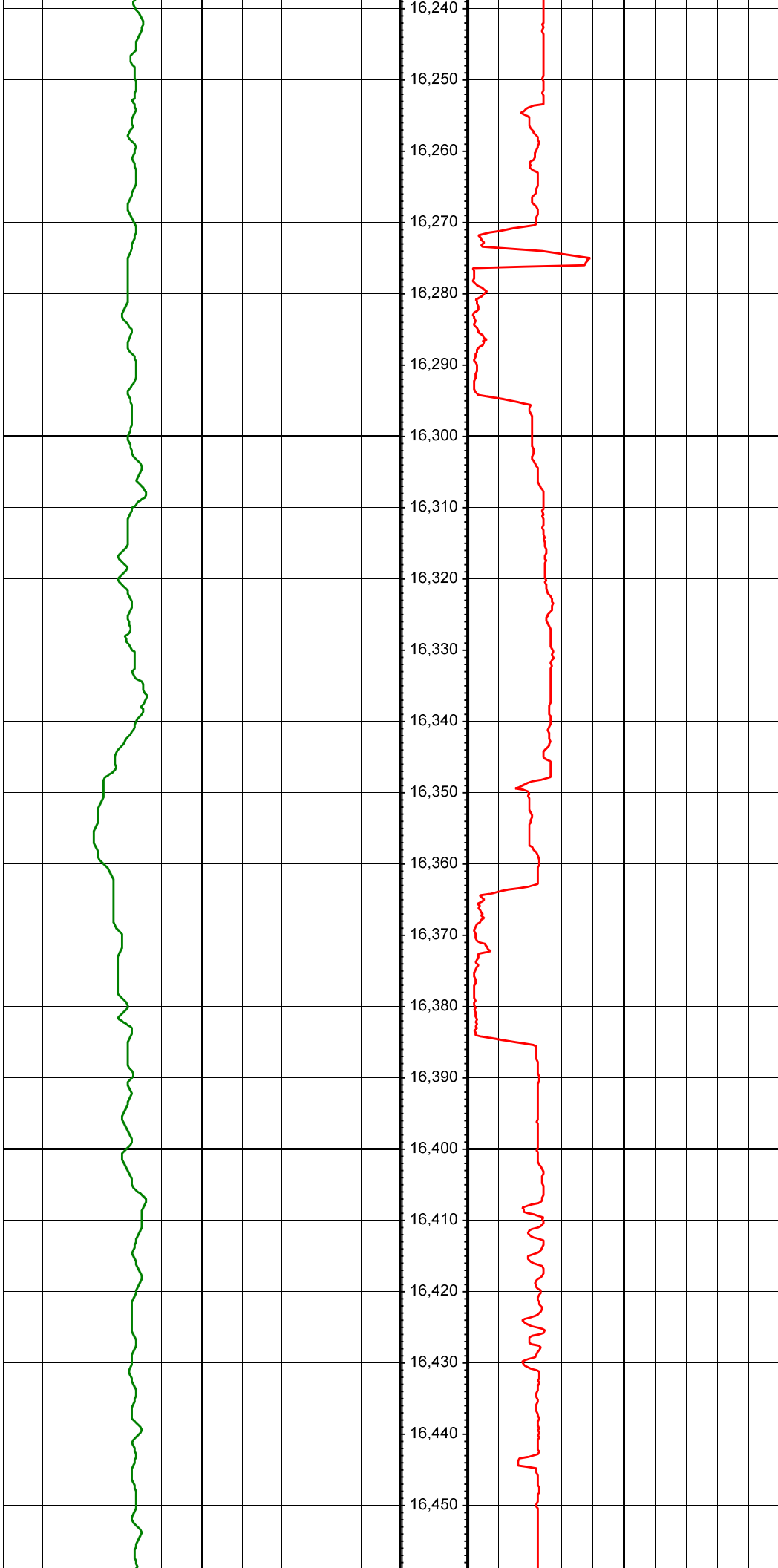




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MD: 16106.00 INC: 90.70 AZ: 0.50

MD: 16200.00 INC: 90.80 AZ: 0.60



MD: 16295.00 INC: 91.40 AZ: 1.00

MD: 16390.00 INC: 91.60 AZ: 0.40

