



Cathedral Energy Services
1949 North Pyrite Road
Casper, Wyoming 82604

145381

5":100' - MD

12/19/2014 3:24:13 PM

CATHEDRAL

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

Country: U.S.A.

State / Province: Colorado

County / Parish: Weld

Started: 10/25/2014 05:00 PM

API/UWI: 05-123-36982

Field: Wattenberg (Codell)

Well: Billings 3B-18H-L368

Rig: Patterson UTI Drilling 326

Ended: 10/31/2014 09:30 AM

Gamma Ray
Section Plane: 90.00
Magnetic North: 8.55
Gamma Attenuation Factor: 2.753
Gamma Averaging: 7%

Personnel

Day Hand: M. Andrew

Night Hand: J. Minter

Comp. Emp: Ira Cox

Maximum Temperature: 232°F

Location

Latitude: 40.222704

Longitude: -105.051741

Elev. GL: 5156

Elev. DF:

Elev. KB: 5188

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

Hole Data

Size	From	To
12-1/4	0	885
8-3/4	885	7630
6-1/8	7630	14105

Casing Data

Size	From	To
9-5/8	0	885
7	0	7630
5	0	14105

Bit Sizes

Size	From	To
12-1/4	0	885
8-3/4	885	7630
6-1/8	7630	14105

Mud Data

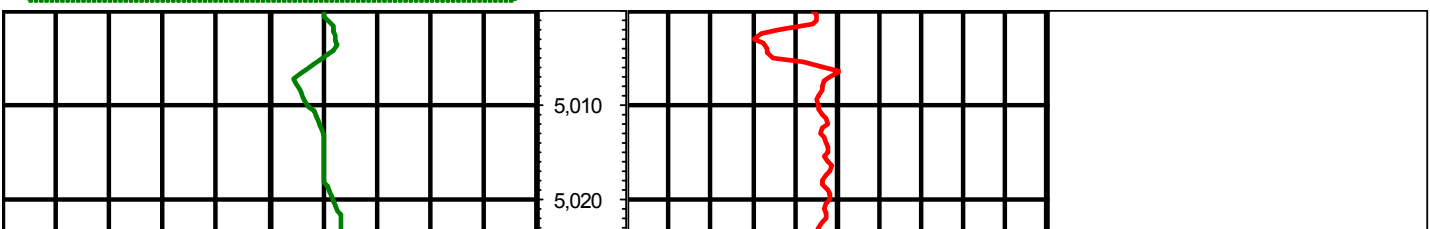
Type	Weight	Density	Viscosity	Rm	Rmf	Rmc	From	To
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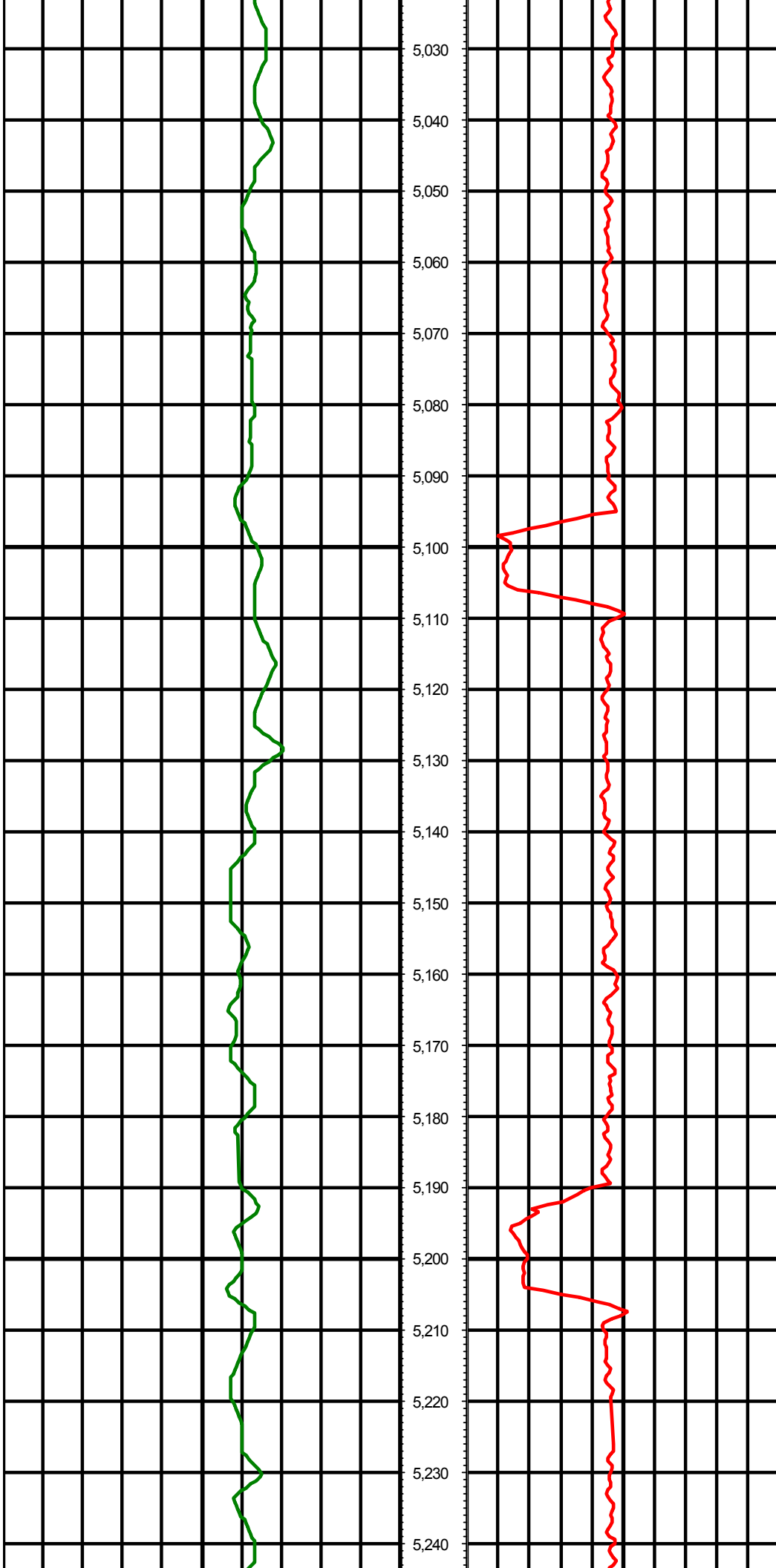
Tool Run Data

Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
1529	36.85	0	10/25/2014 5:00:37 PM	885	10/27/2014 2:00:37 AM	7638
1279	40.66	0	10/28/2014 10:00:53 AM	7630	10/31/2014 9:30:53 AM	14105

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





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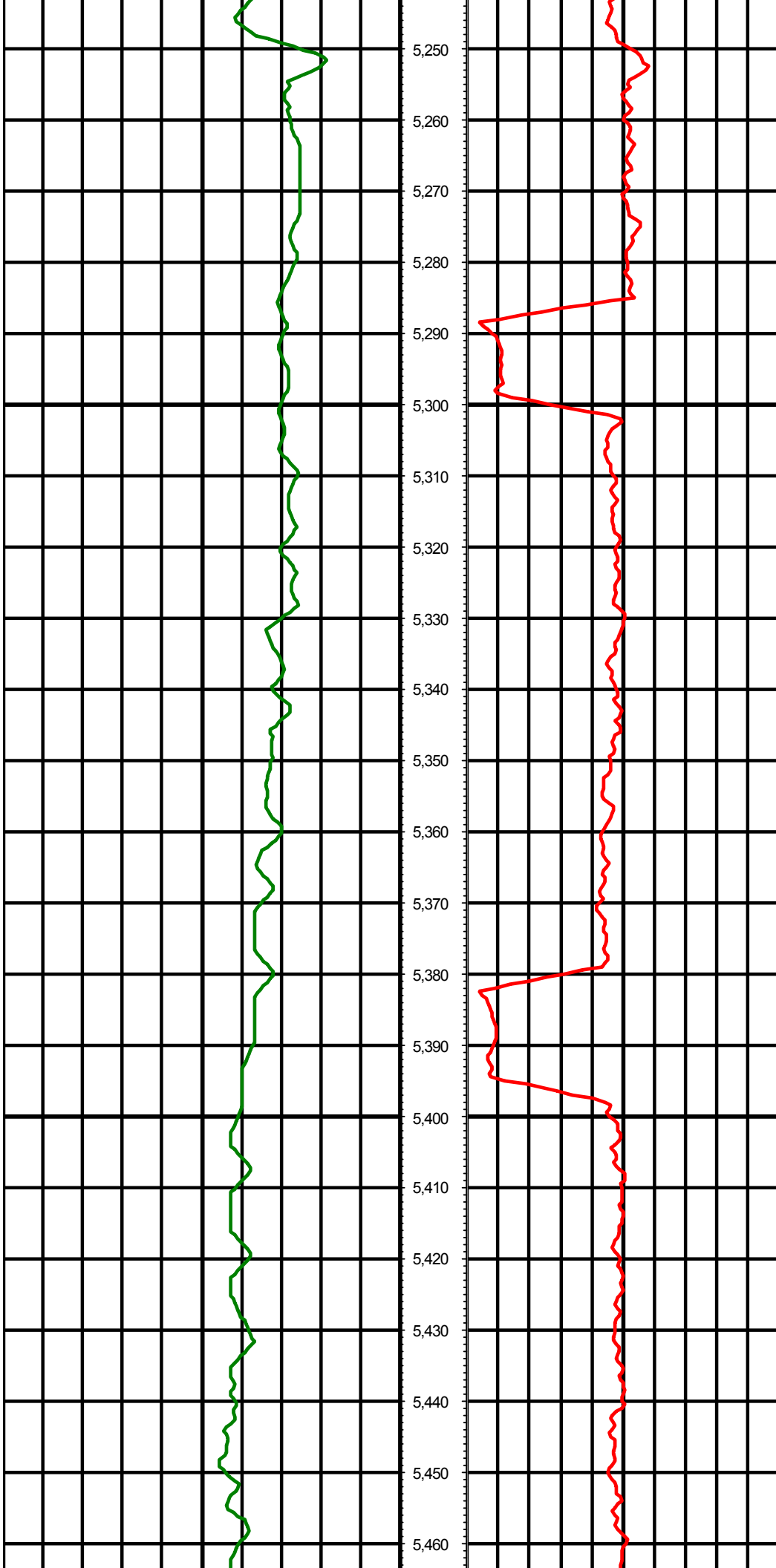
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MD: 5141.00 INC: 9.60 AZ: 299.70

MD: 5236.00 INC: 9.30 AZ: 305.10



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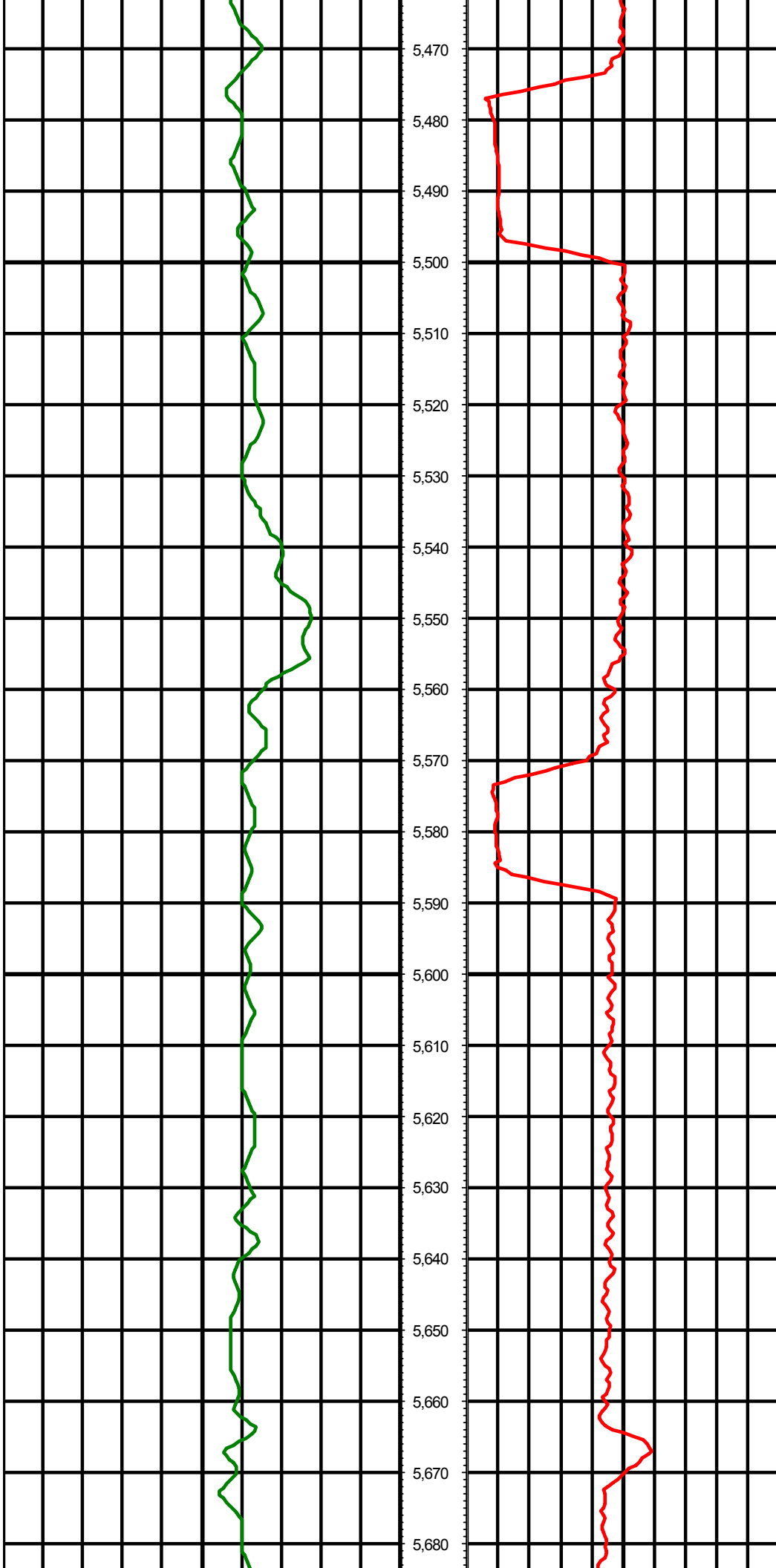
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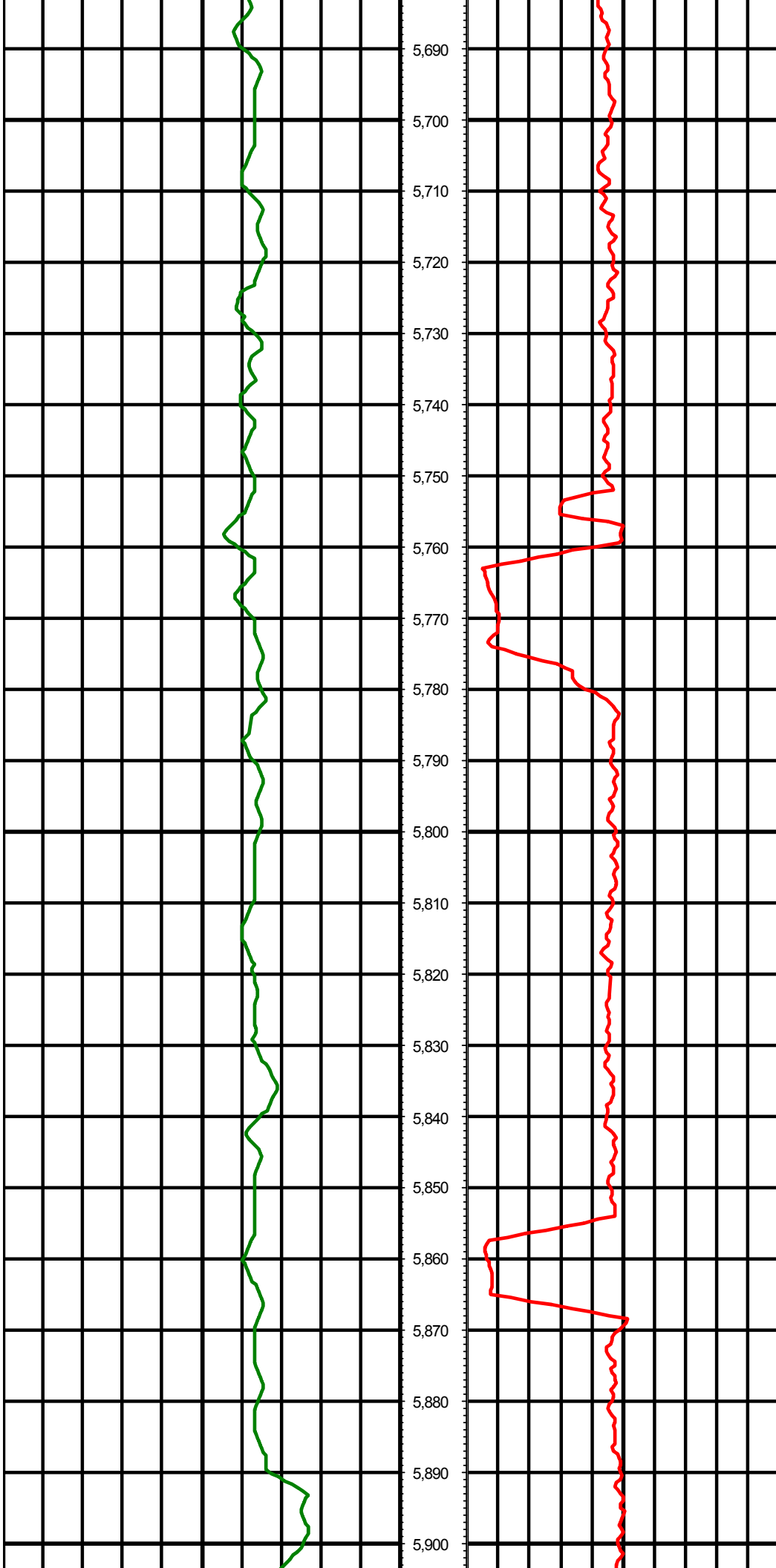
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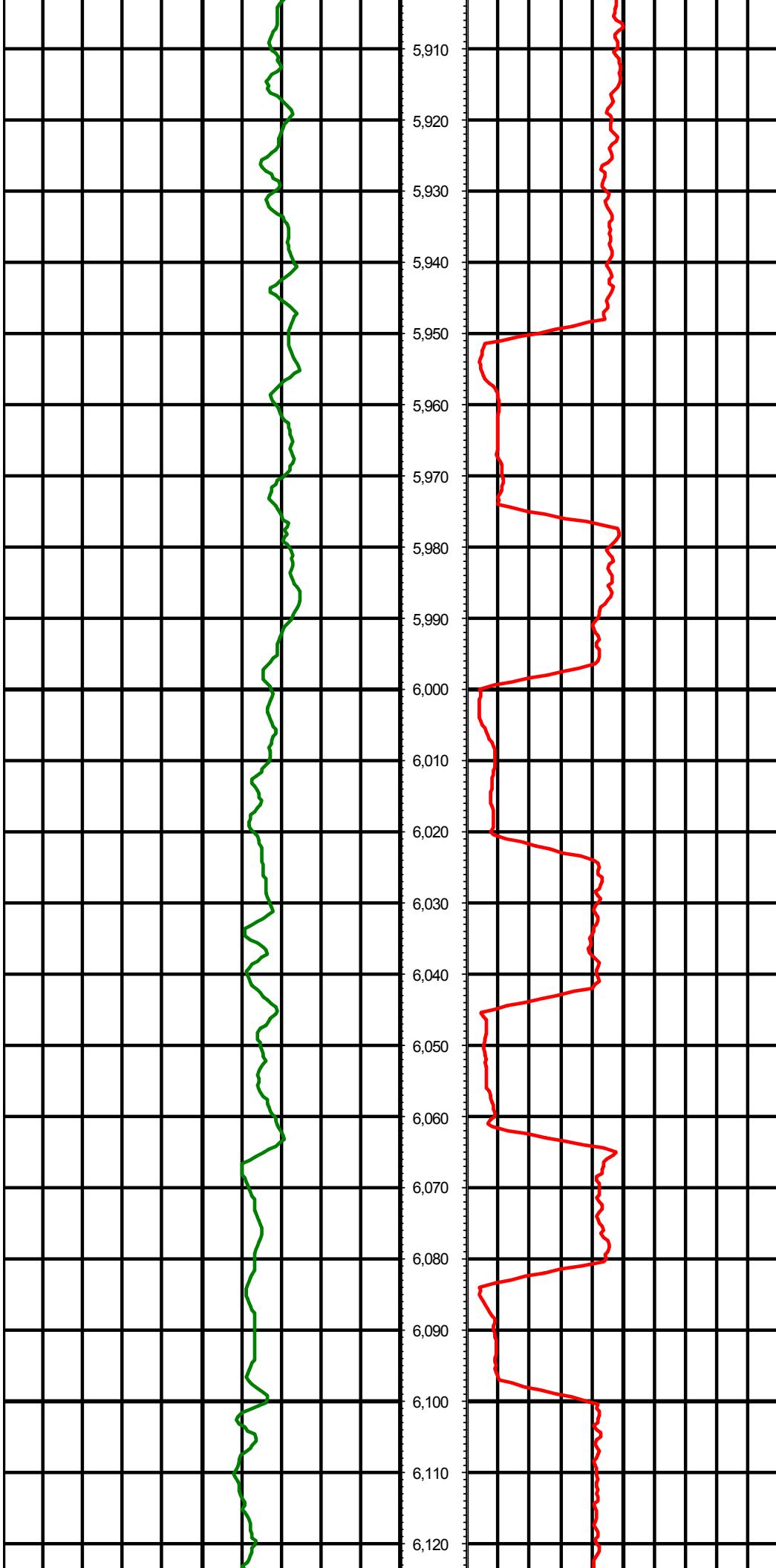
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MD: 5709.00 INC: 9.80 AZ: 296.30

MD: 5803.00 INC: 9.40 AZ: 300.40

MD: 5898.00 INC: 8.80 AZ: 303.30

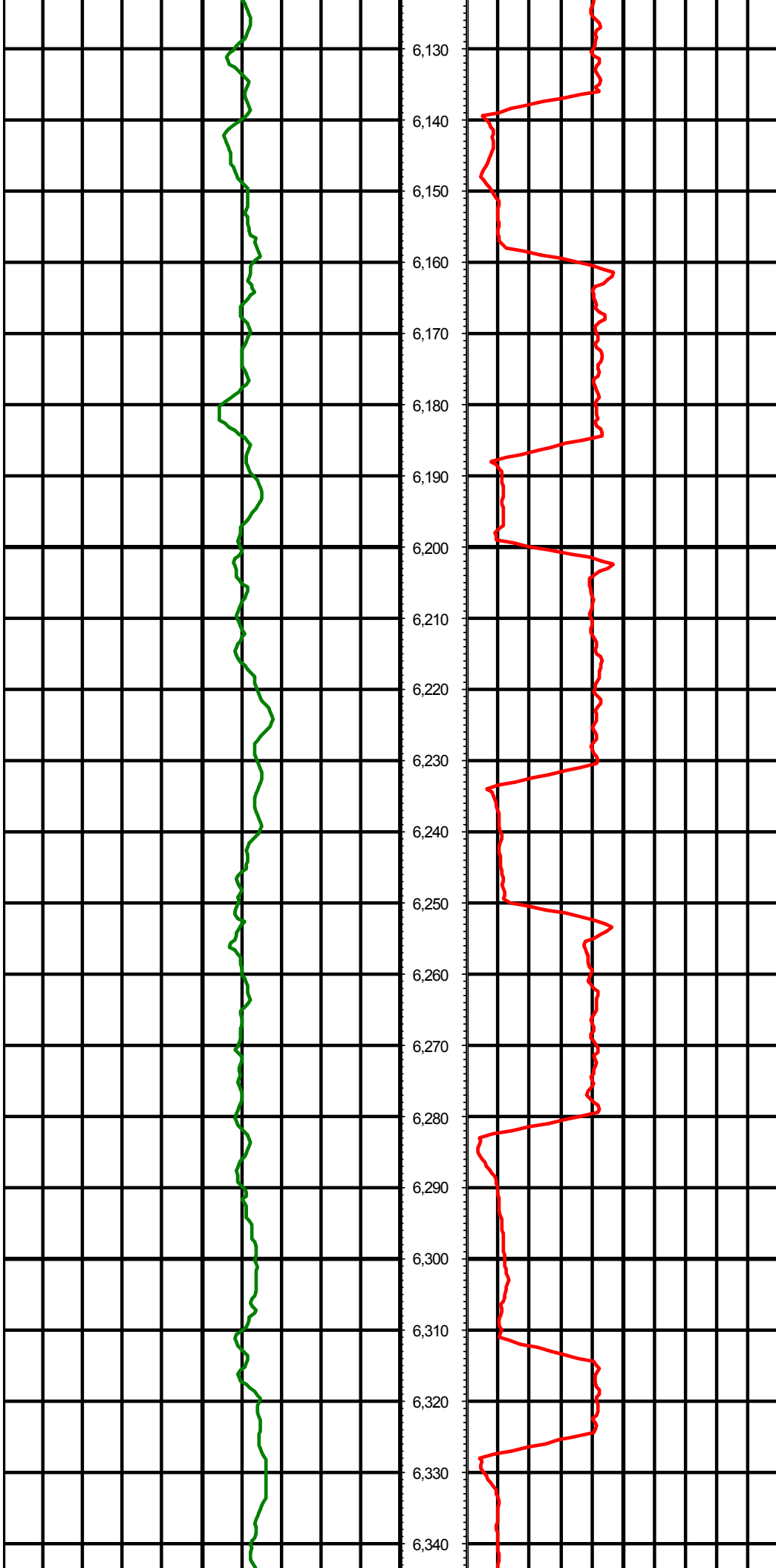


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MD: 5993.00 INC: 10.10 AZ: 314.90

MD: 6040.00 INC: 10.90 AZ: 326.50

MD: 6087.00 INC: 11.00 AZ: 345.00



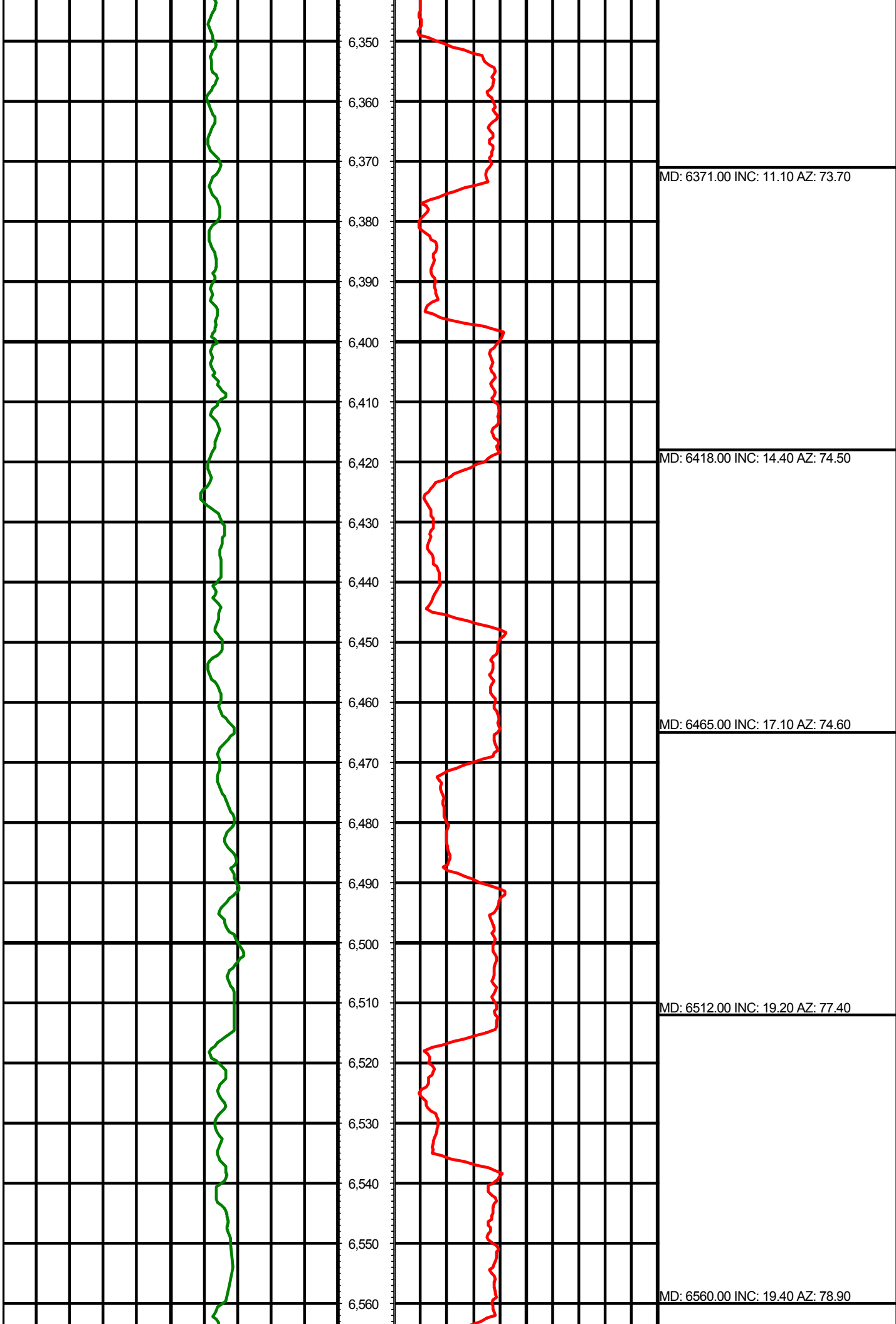
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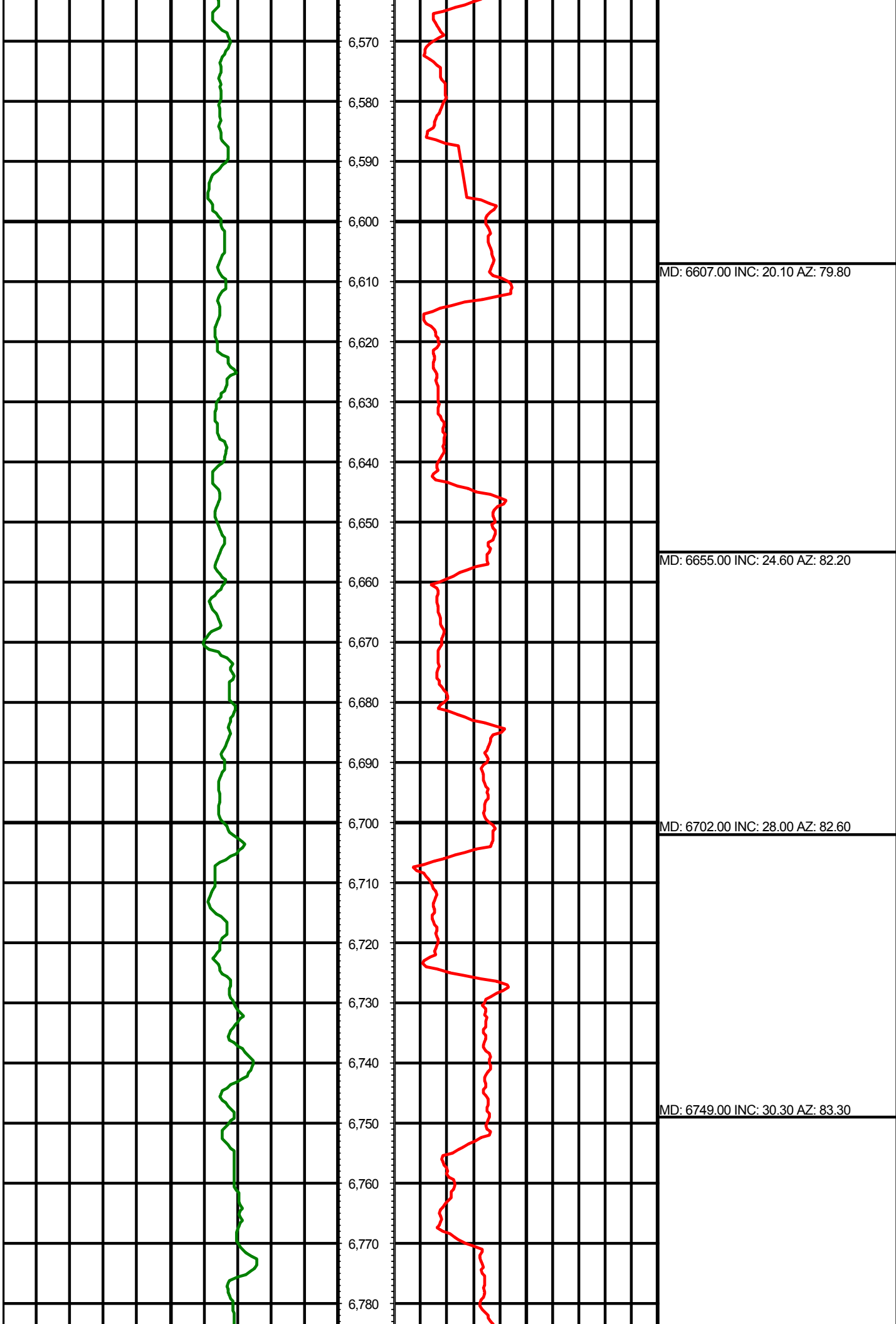
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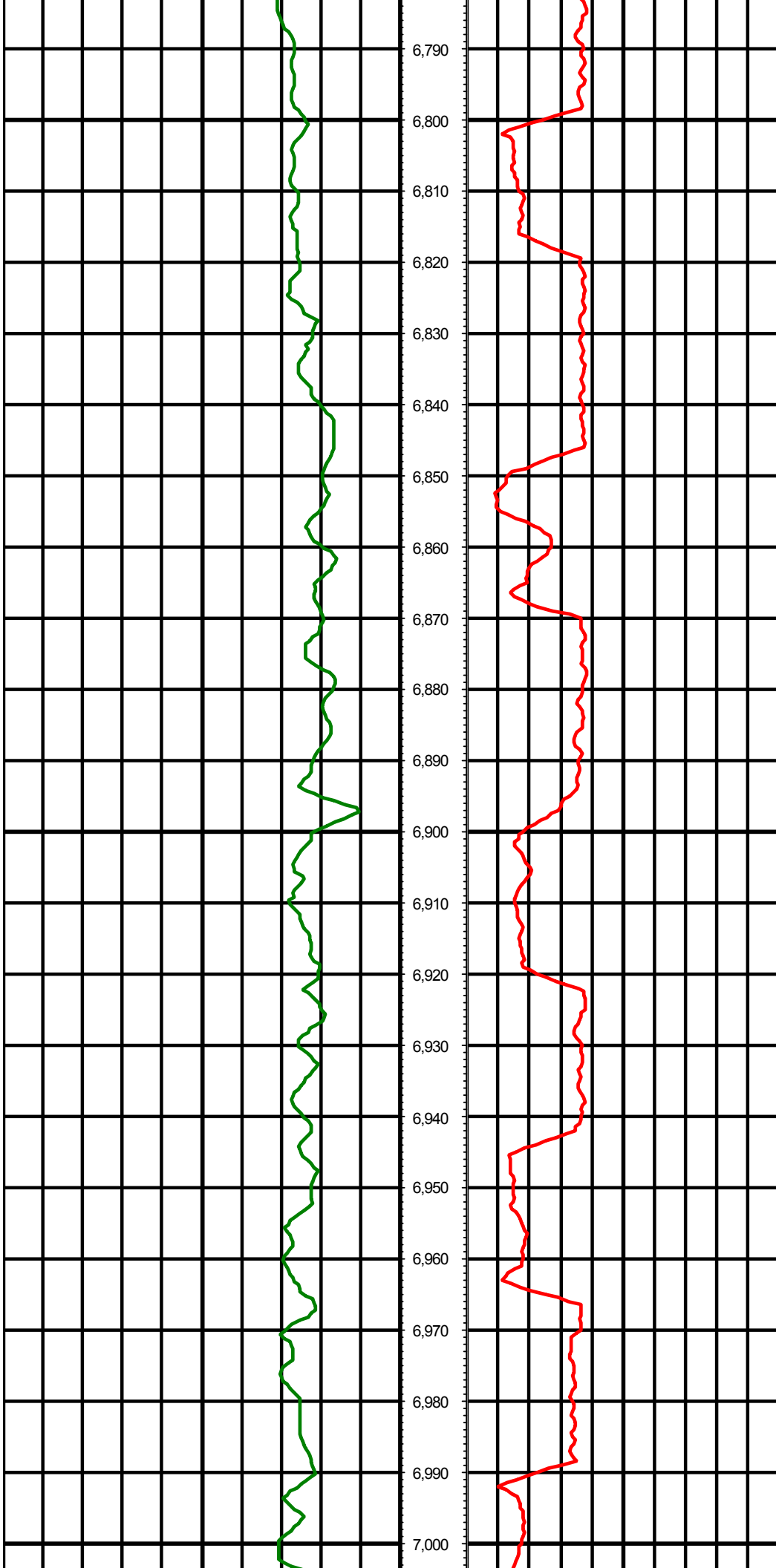
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MD: 6276.00 INC: 8.70 AZ: 34.00

MD: 6323.00 INC: 9.10 AZ: 63.00







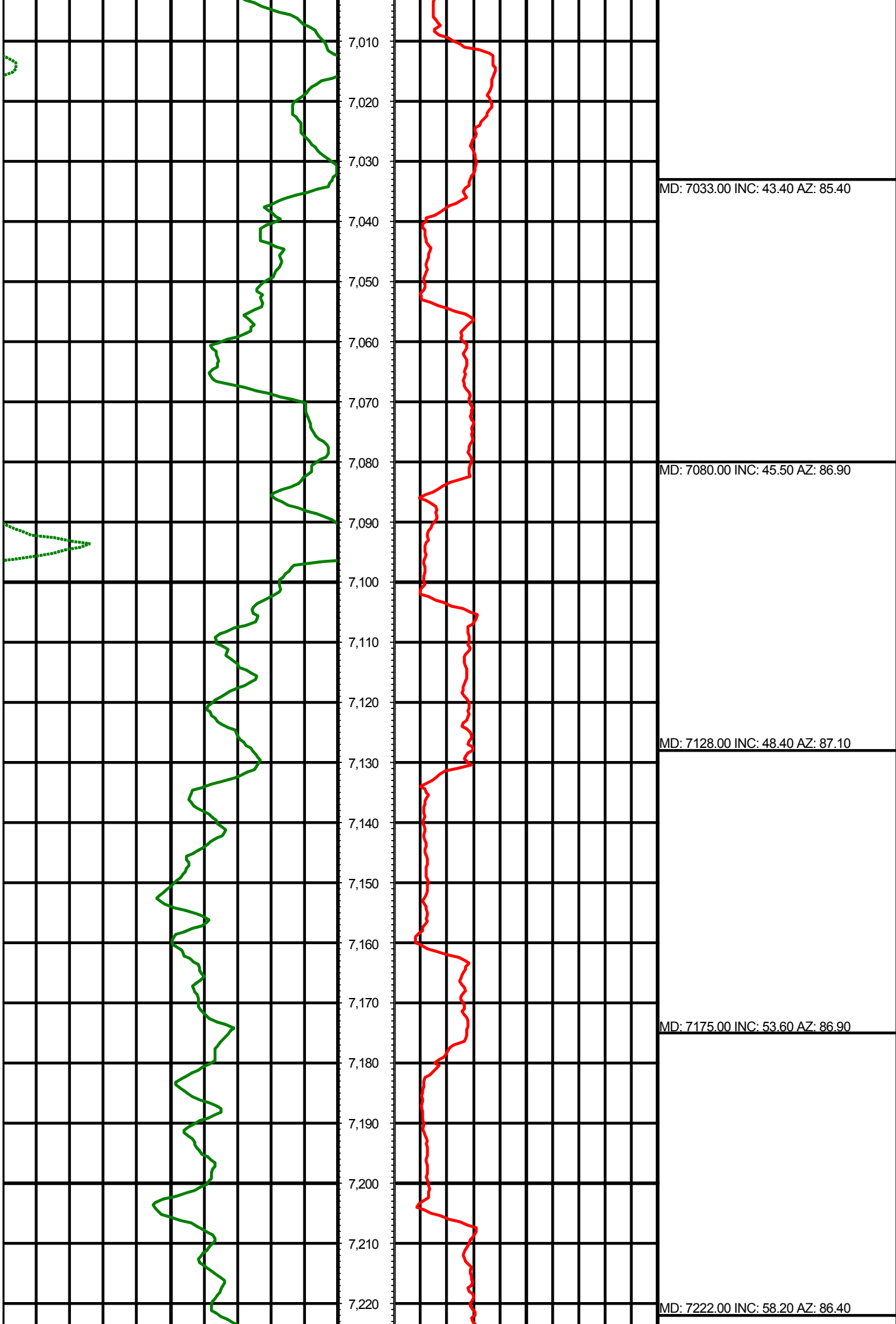
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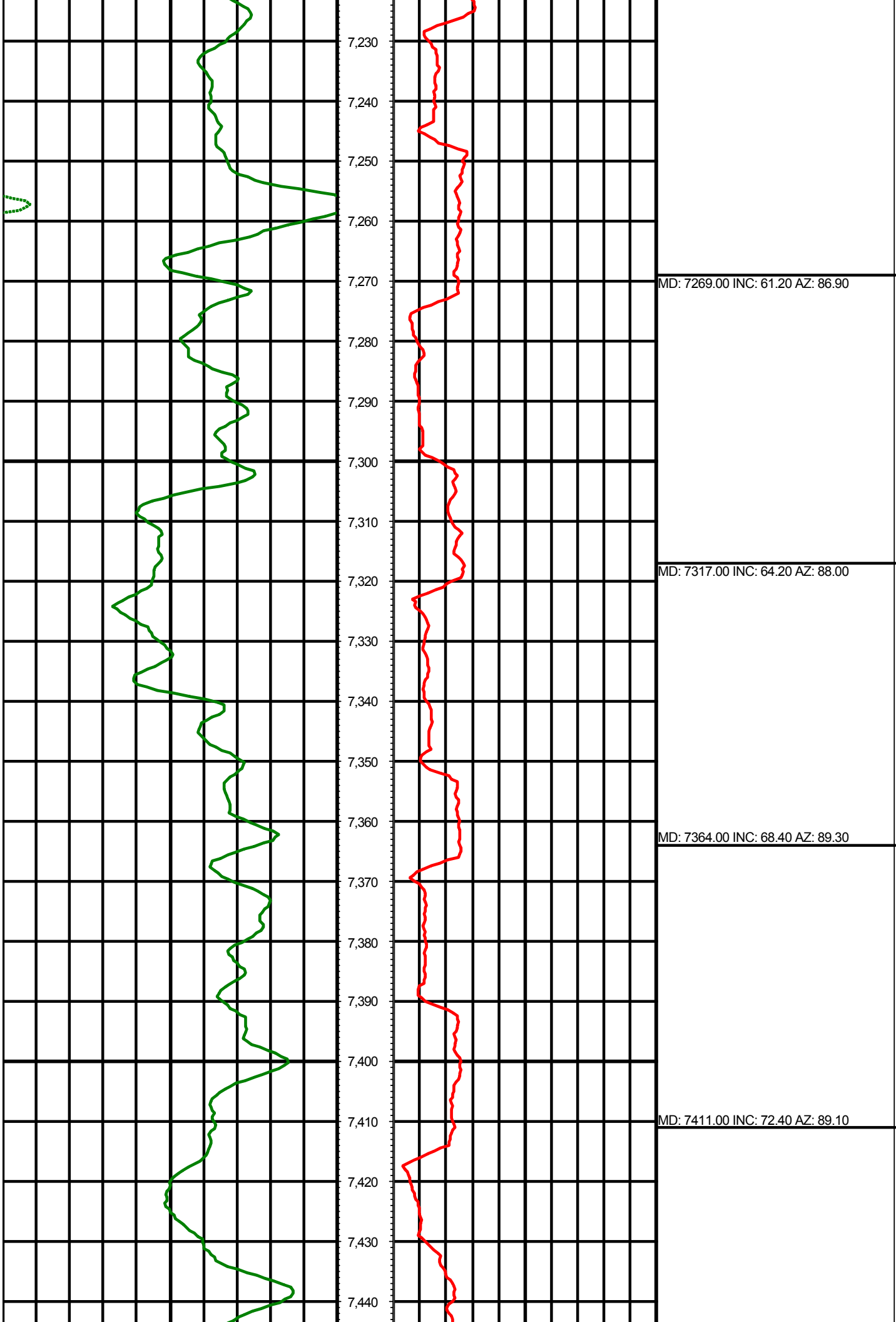
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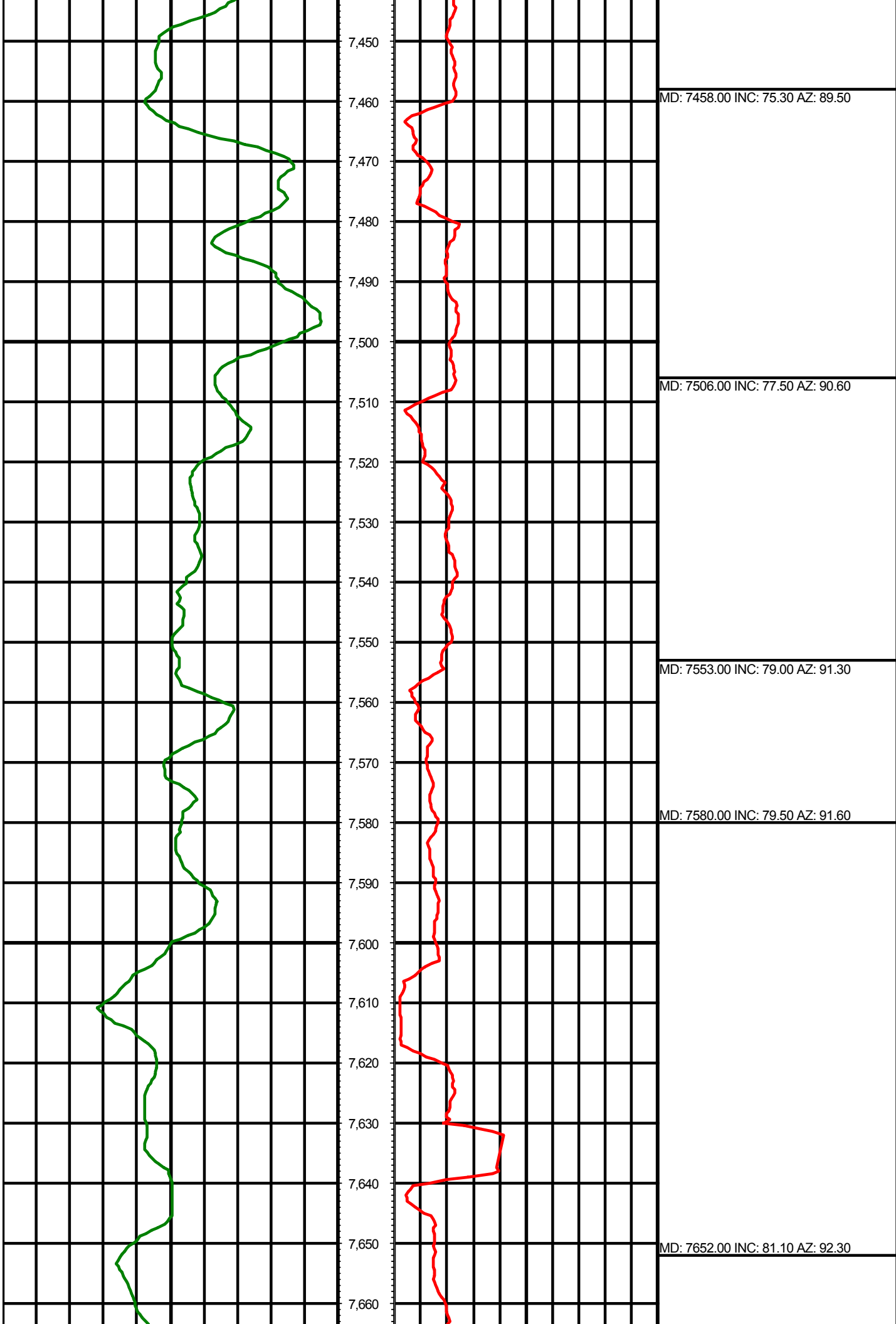
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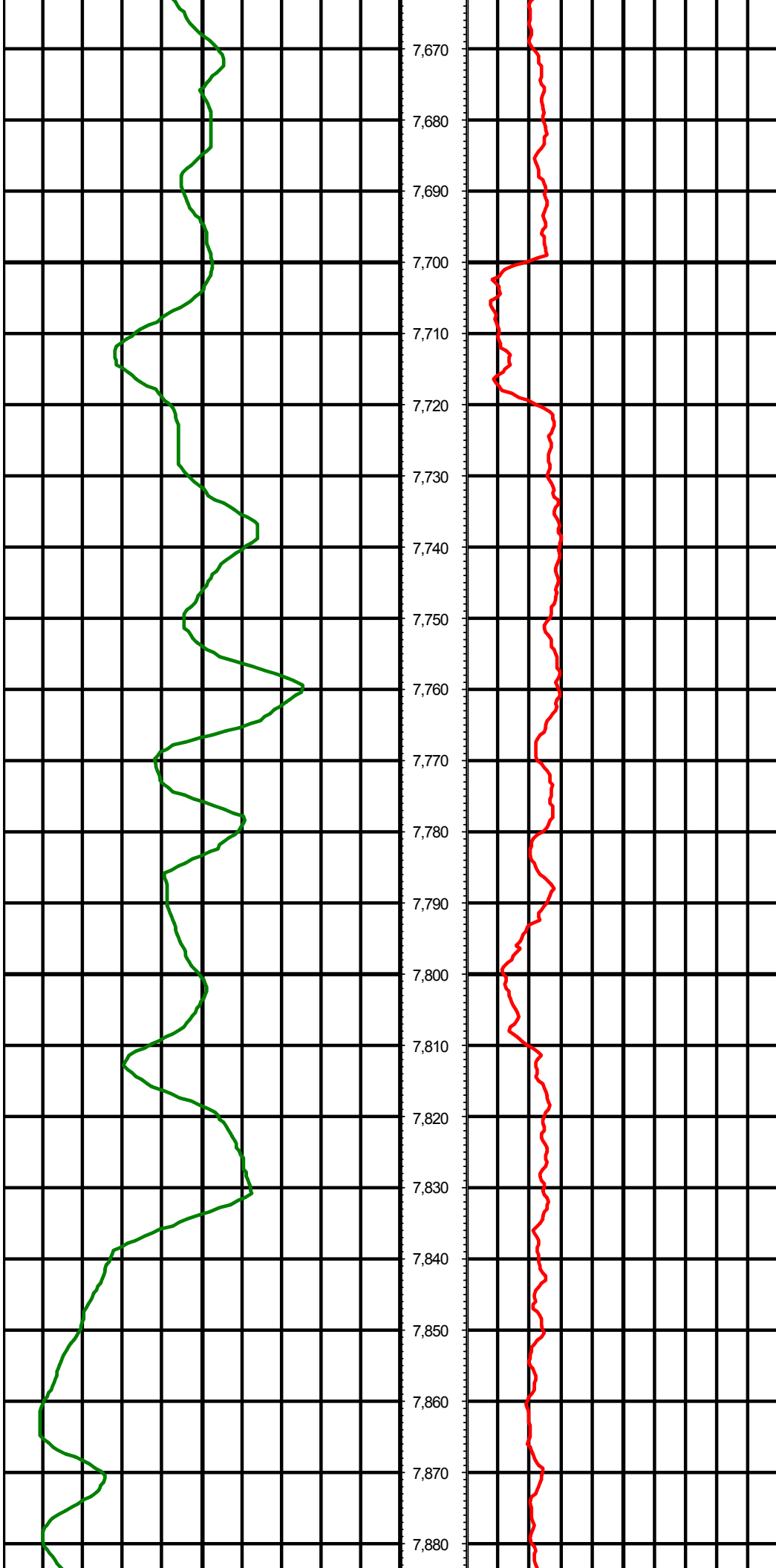
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MD: 6986.00 INC: 41.10 AZ: 83.90









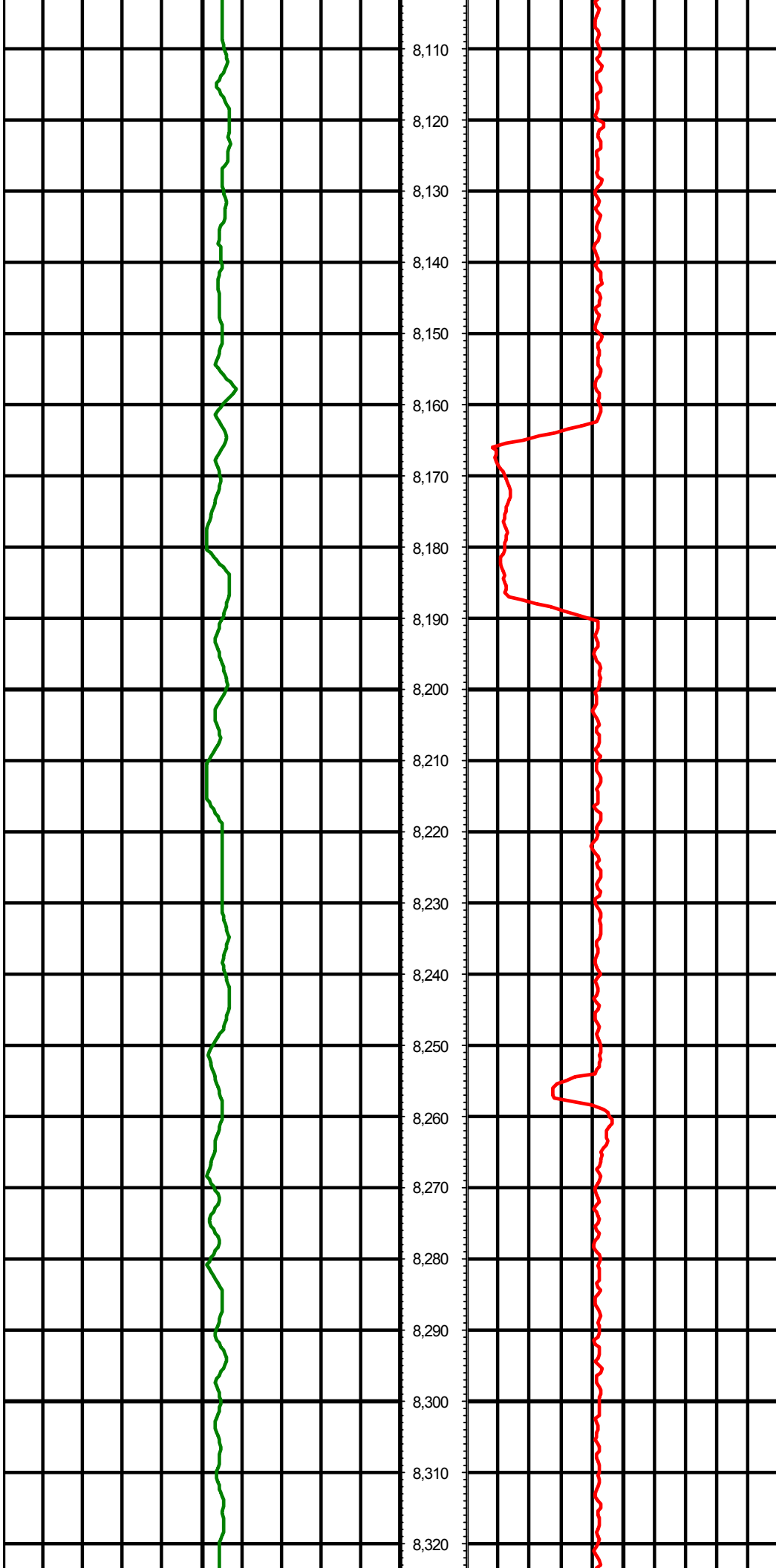
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MD: 7835.00 INC: 80.90 AZ: 90.60



MD: 7927.00 INC: 83.30 AZ: 90.50

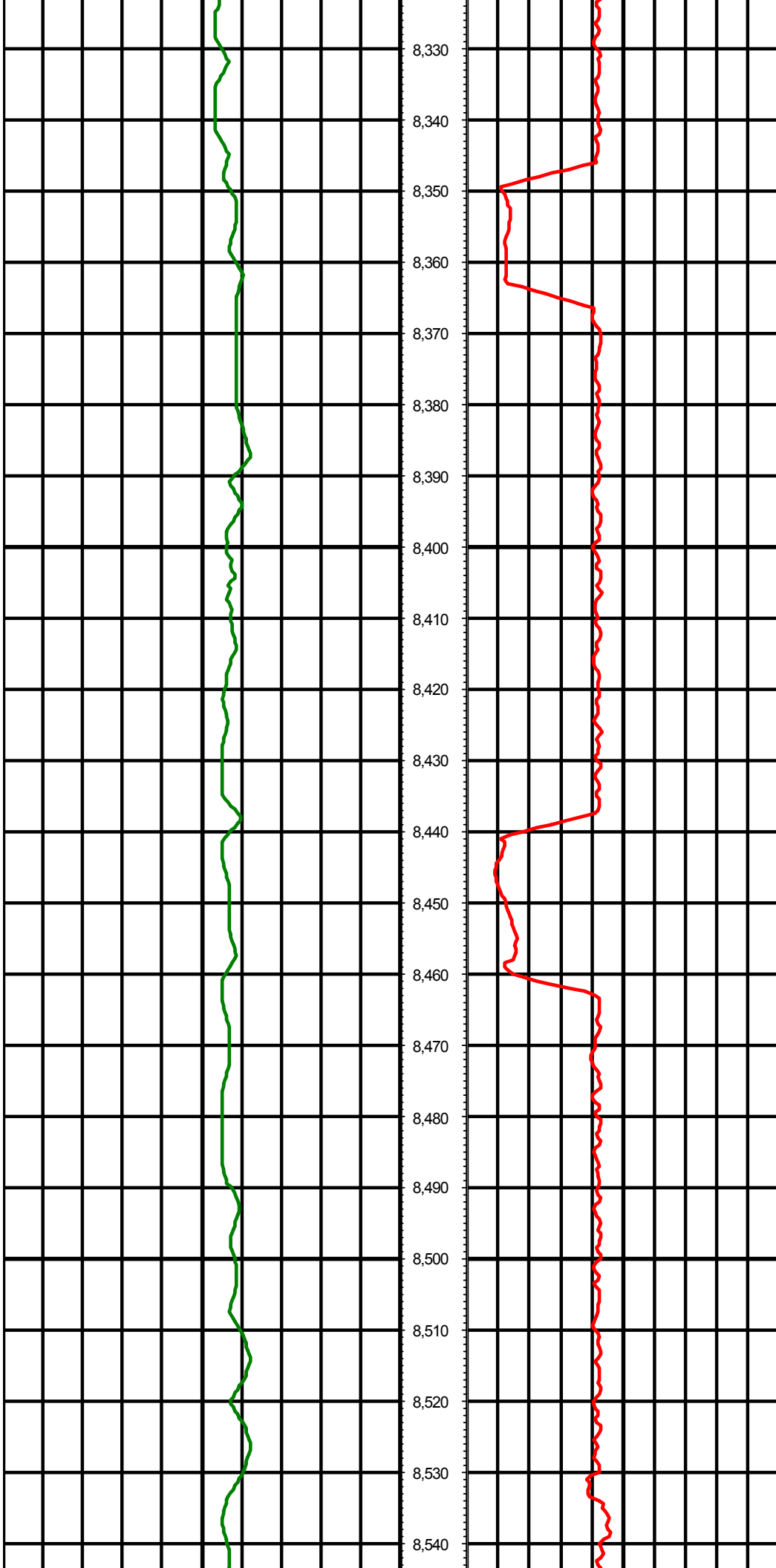
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MD: 8111.00 INC: 86.20 AZ: 90.40

MD: 8203.00 INC: 89.30 AZ: 89.90

MD: 8295.00 INC: 90.00 AZ: 89.60



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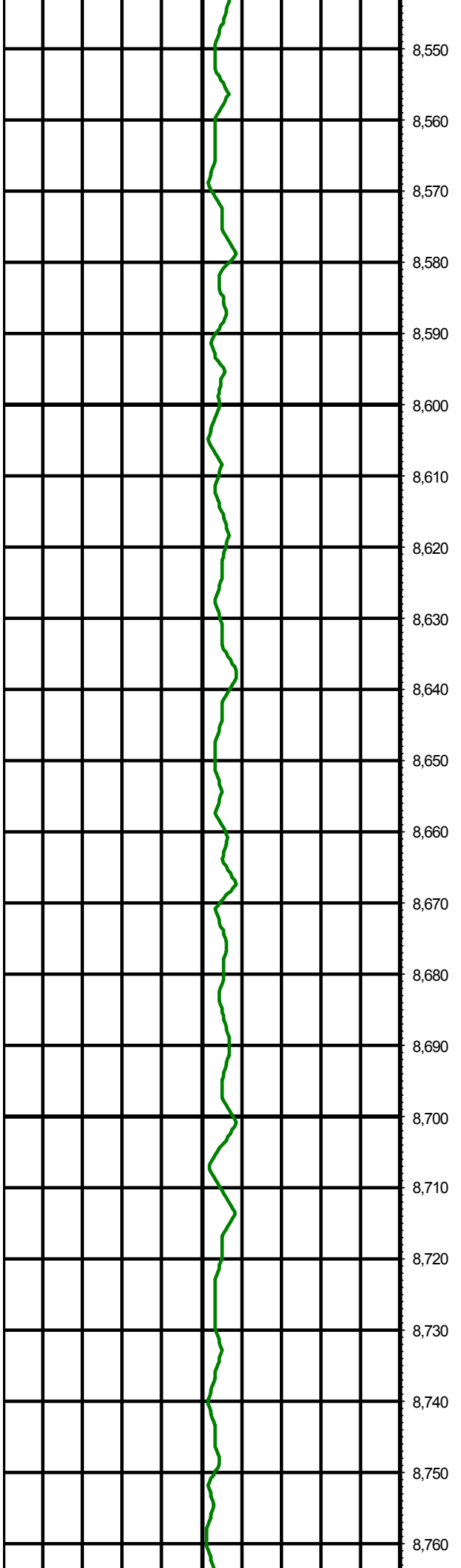
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MD: 8666.00 INC: 88.20 AZ: 88.20

MD: 8761.00 INC: 88.40 AZ: 89.40



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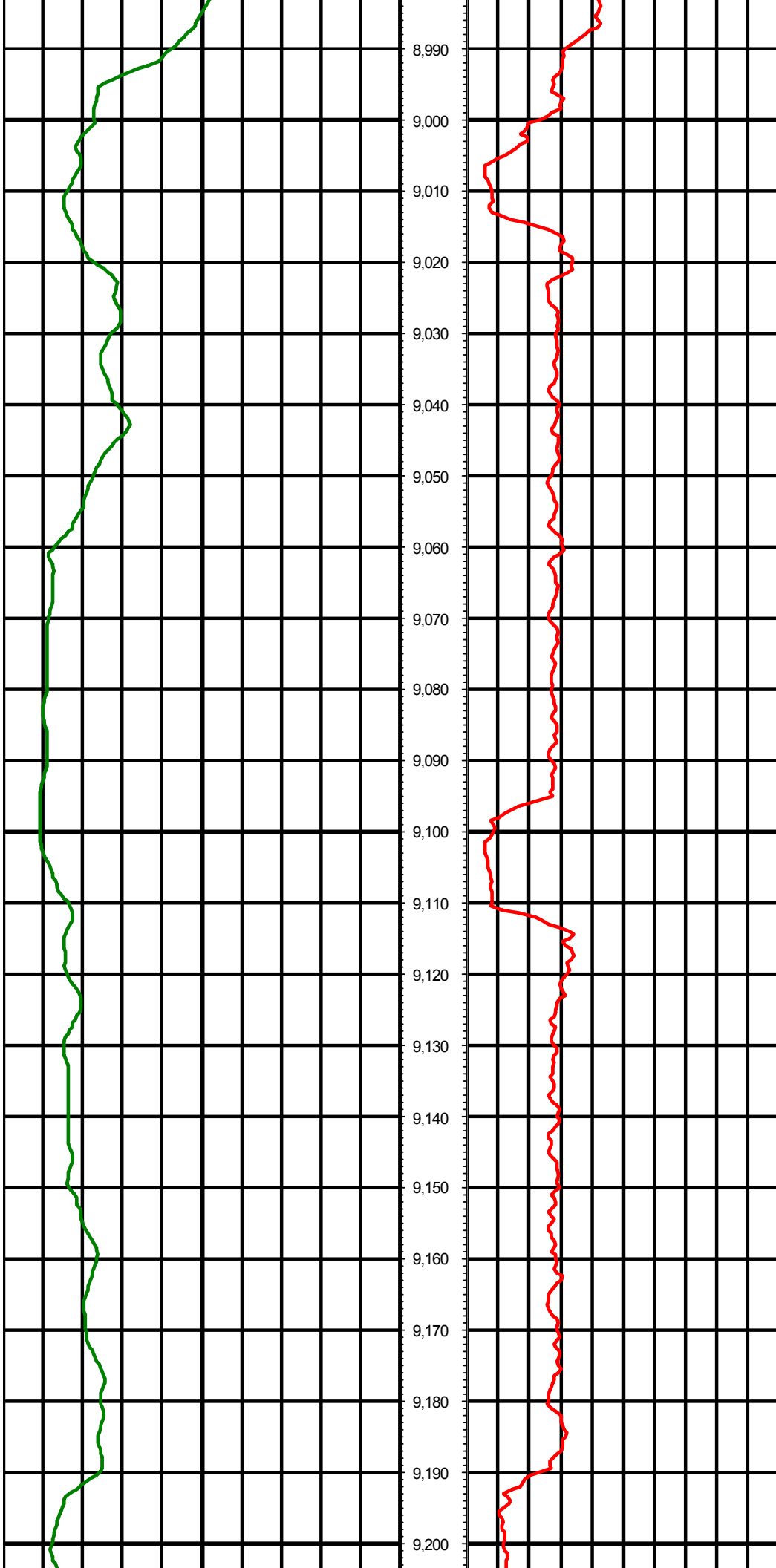
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MD: 8950.00 INC: 89.60 AZ: 90.00



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MD: 9139.00 INC: 89.40 AZ: 90.50



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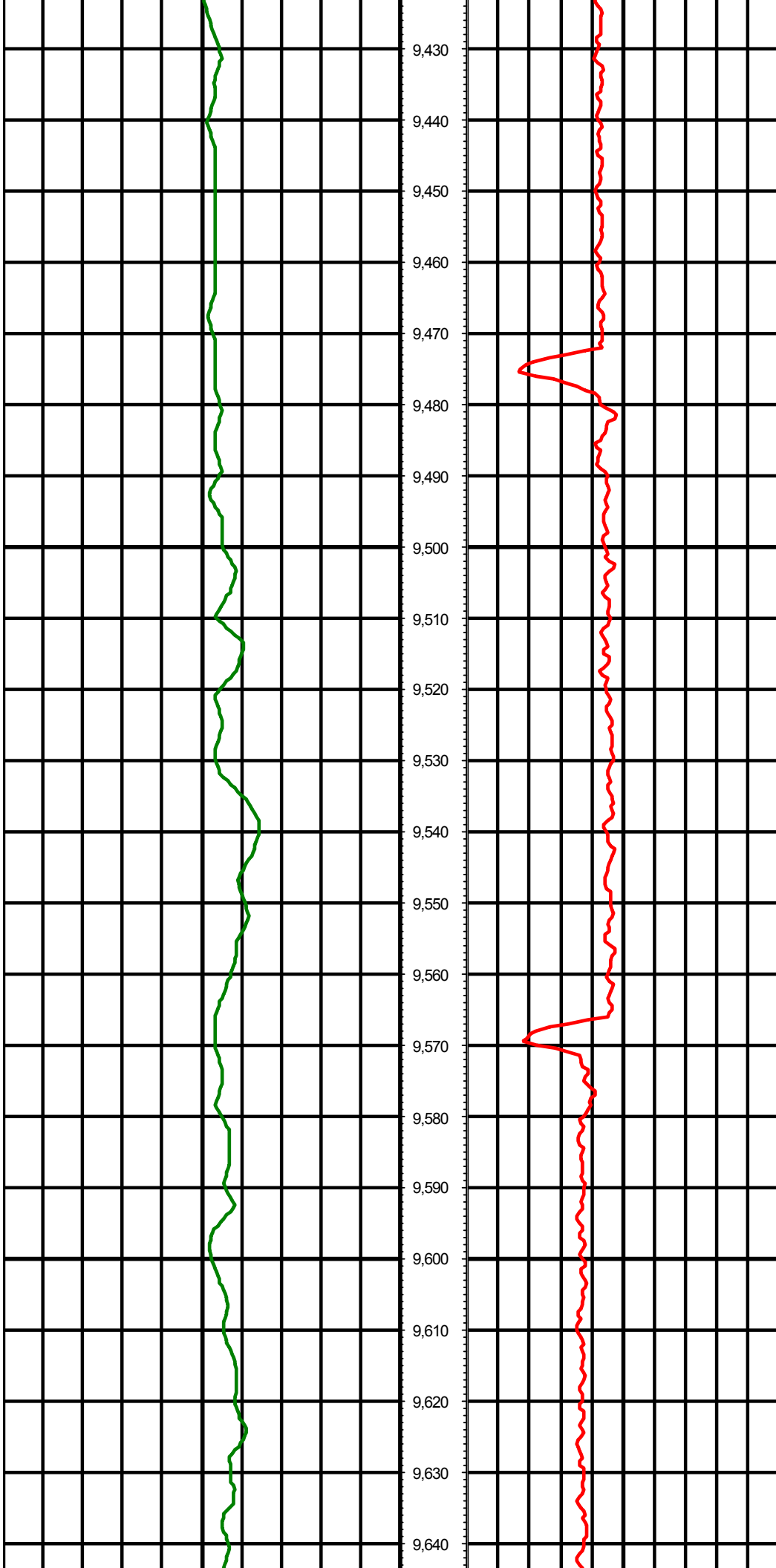
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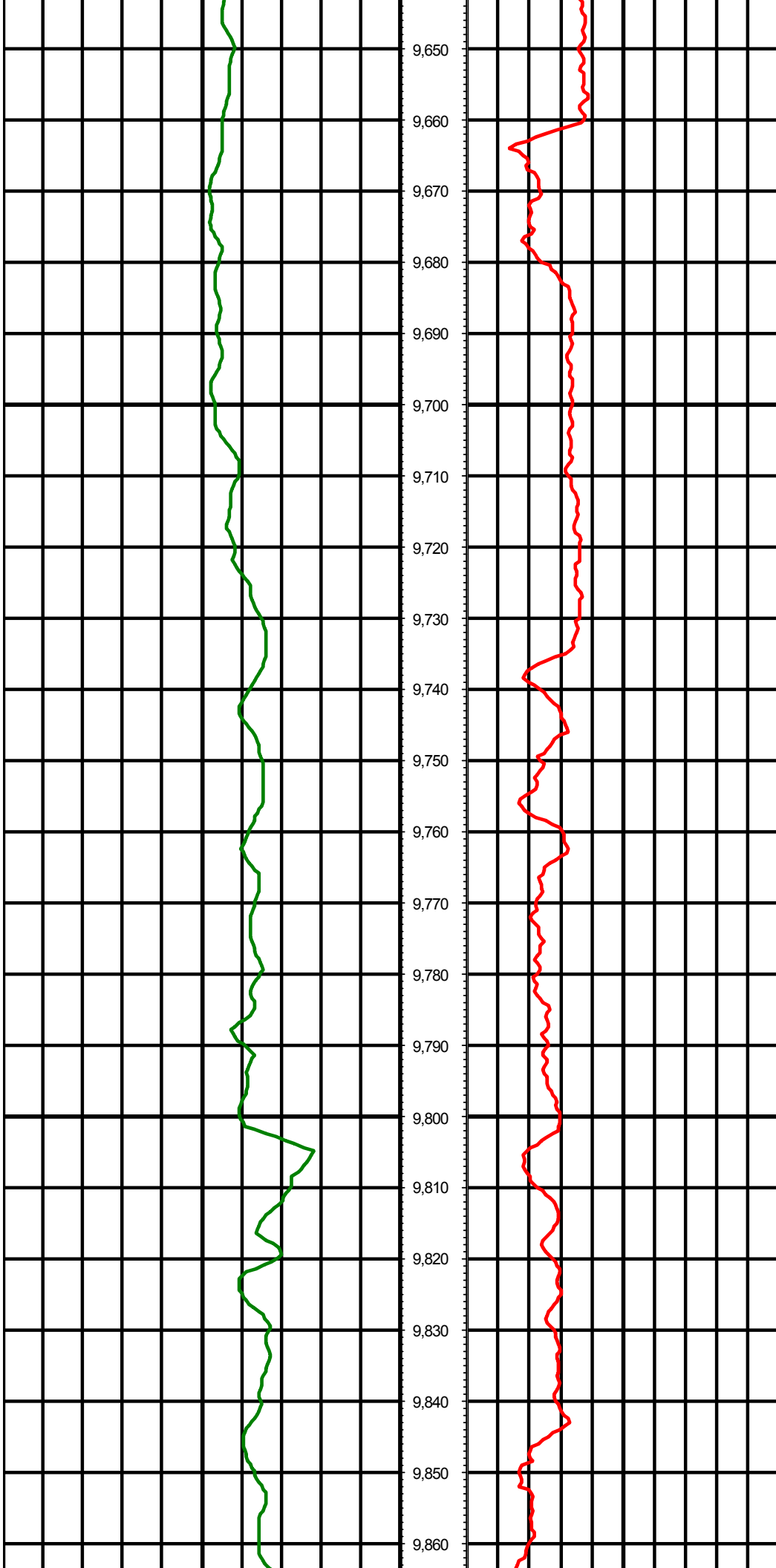


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MD: 9517.00 INC: 87.90 AZ: 89.30

MD: 9612.00 INC: 88.70 AZ: 89.40



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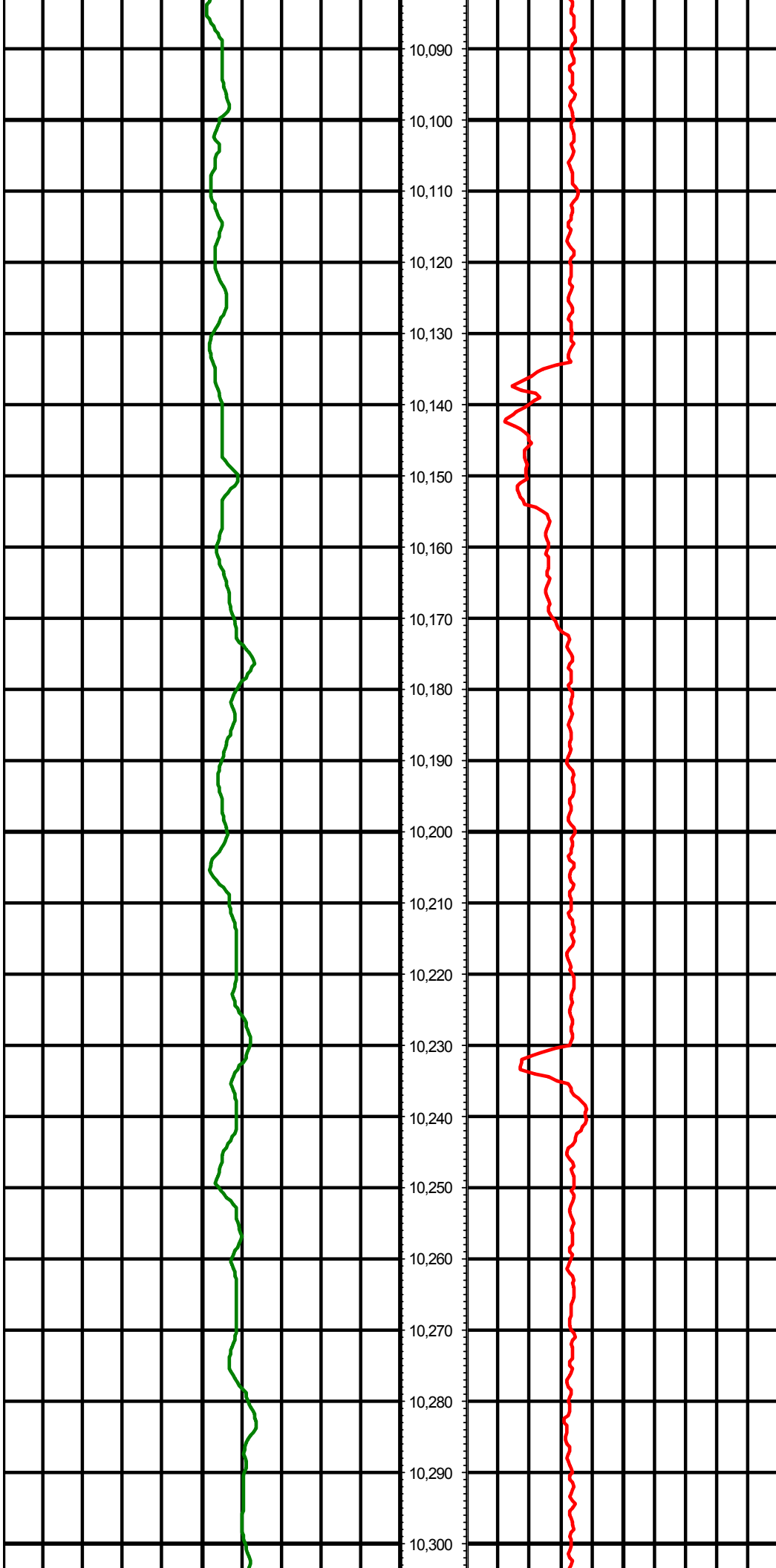
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MD: 9895.00 INC: 87.70 AZ: 92.00

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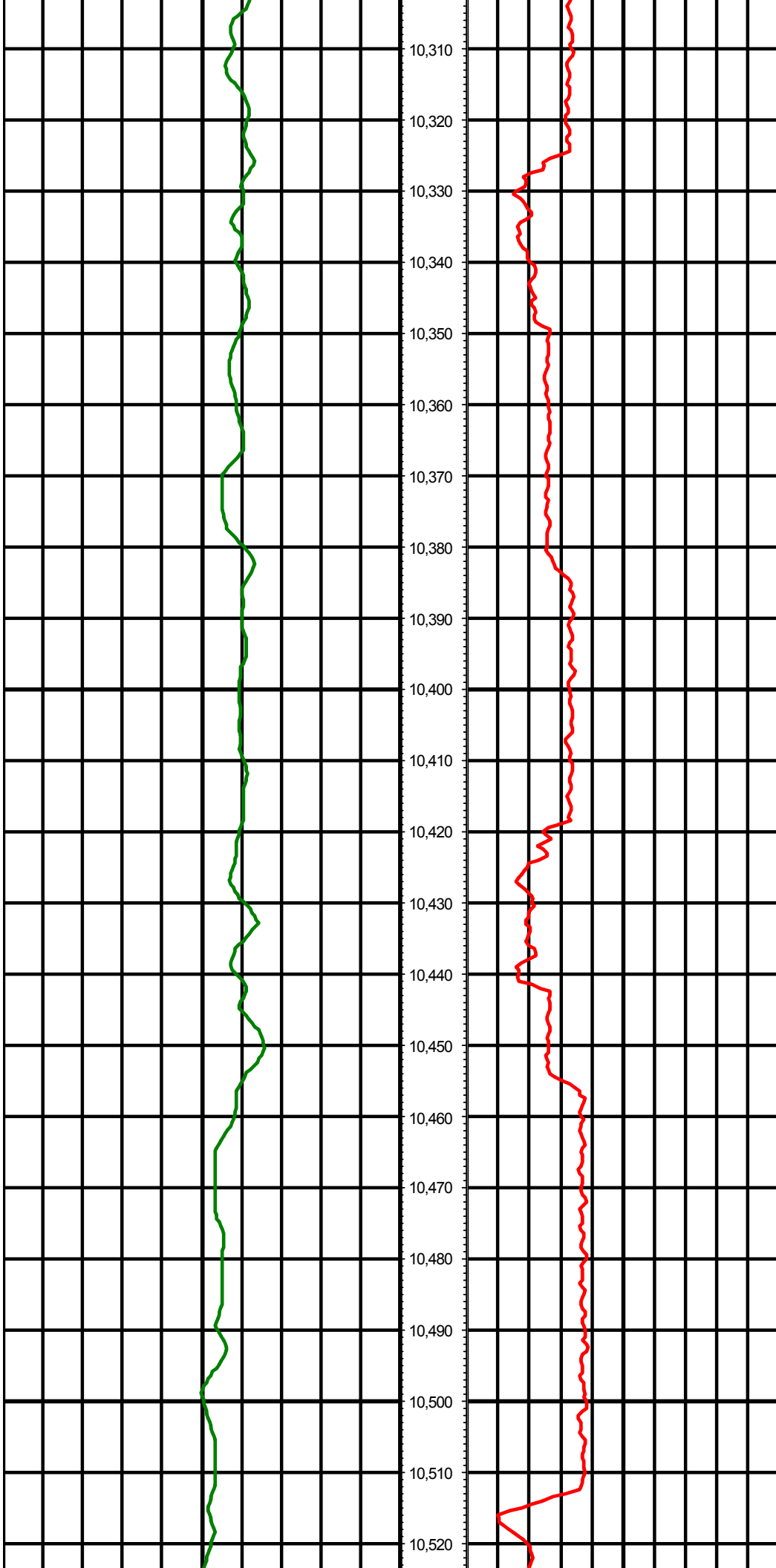
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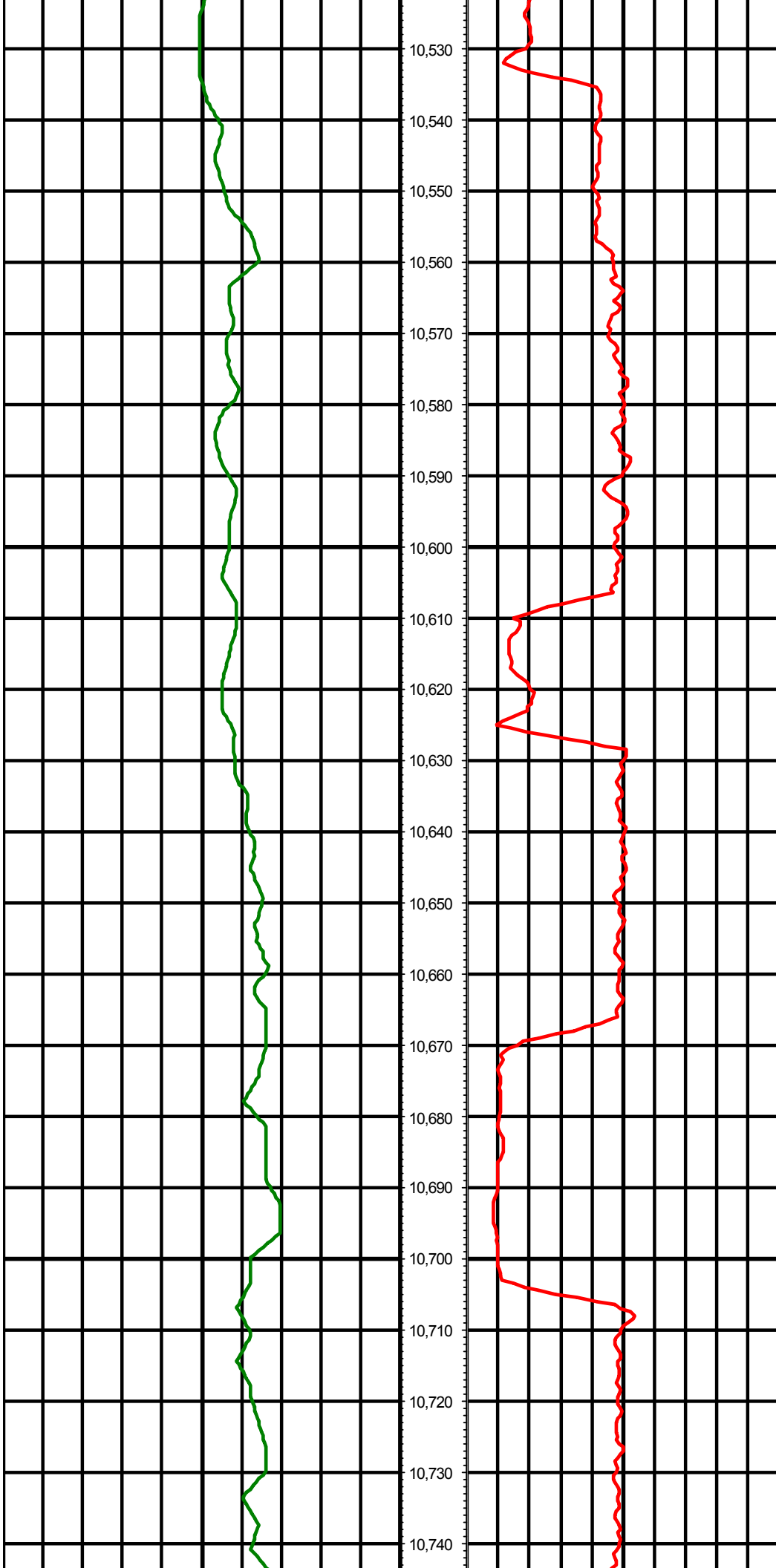
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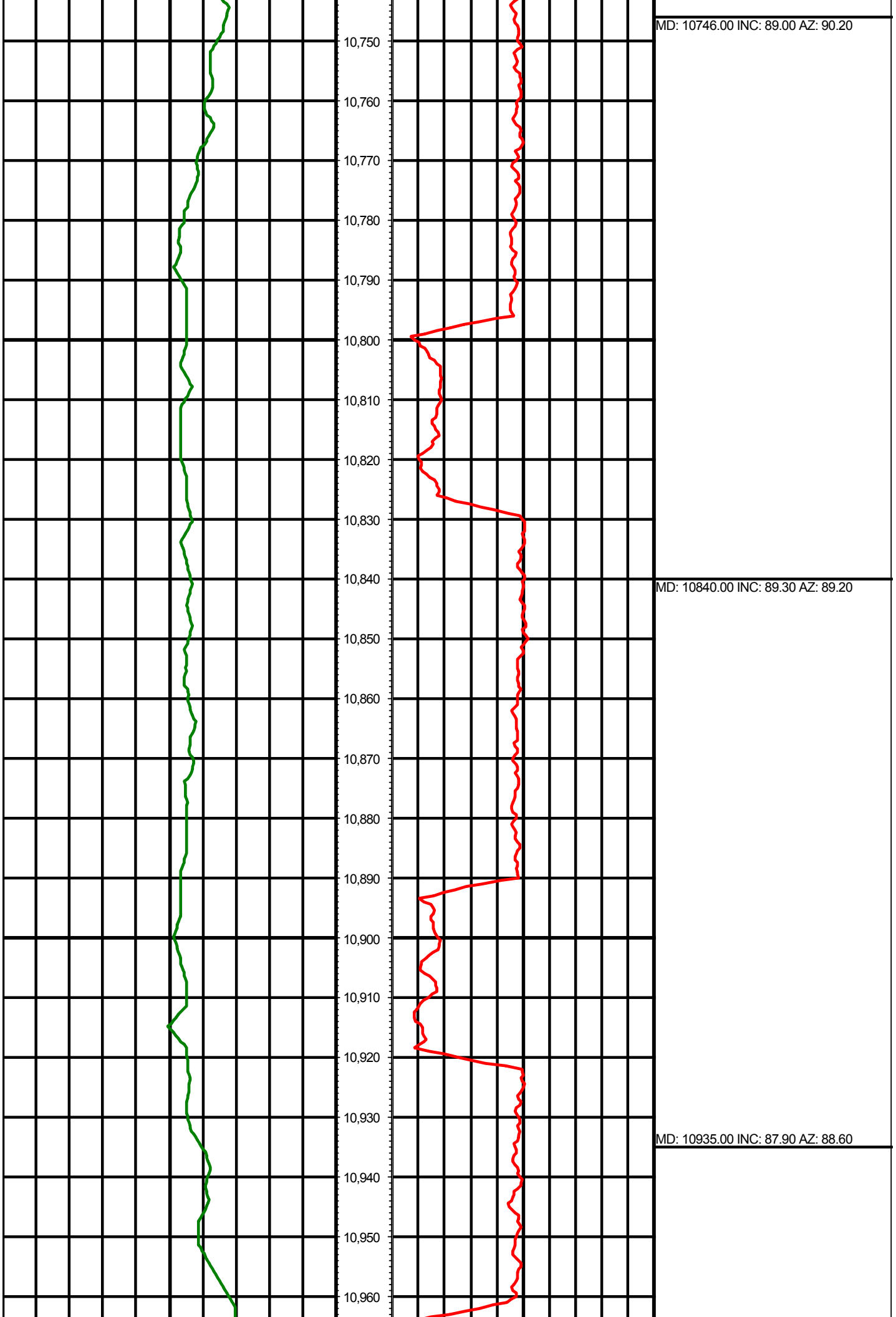
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MD: 10557.00 INC: 88.30 AZ: 90.10

MD: 10651.00 INC: 88.40 AZ: 89.40



MD: 10746.00 INC: 89.00 AZ: 90.20

MD: 10840.00 INC: 89.30 AZ: 89.20

MD: 10935.00 INC: 87.90 AZ: 88.60



MD: 11029.00 INC: 88.20 AZ: 88.50

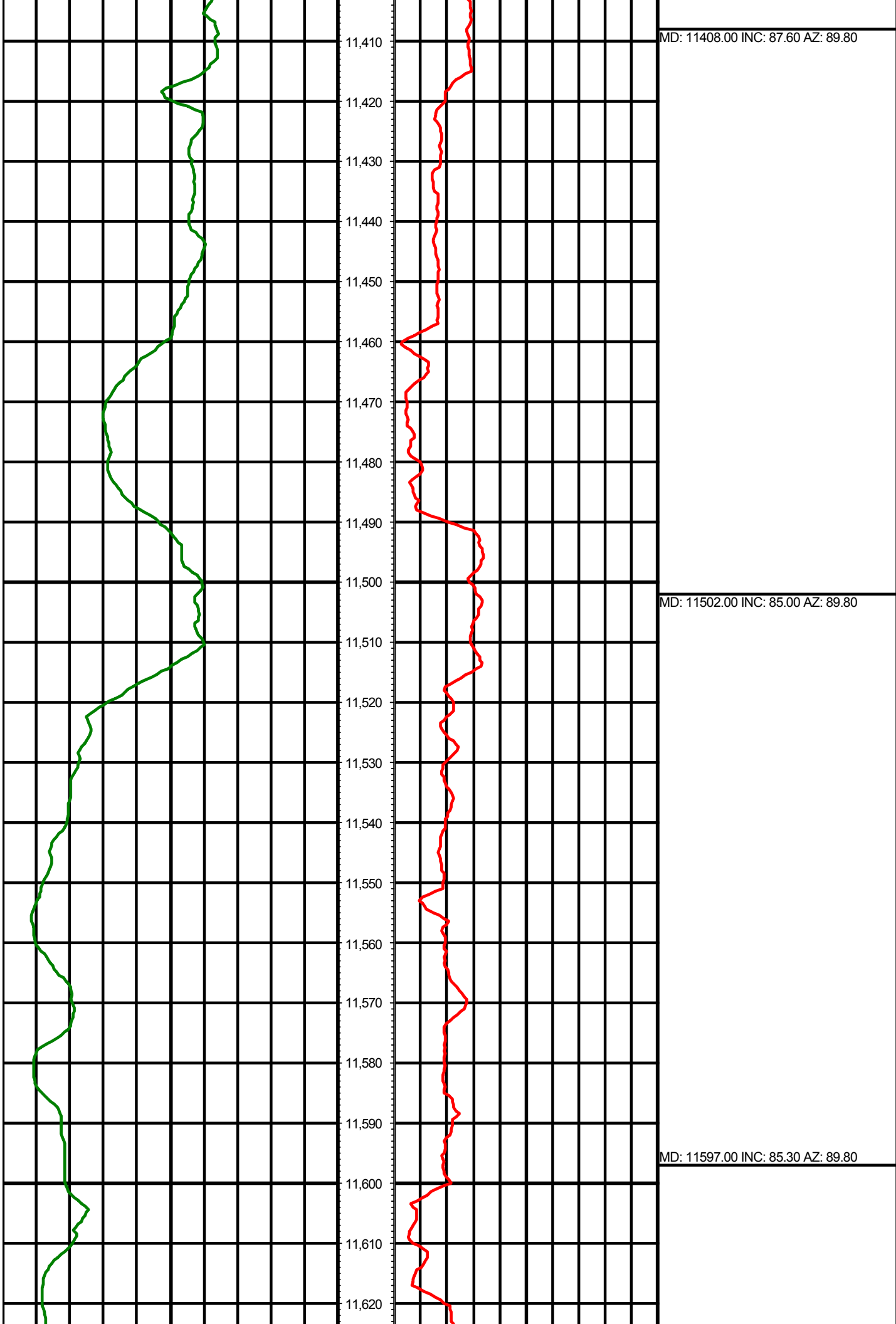
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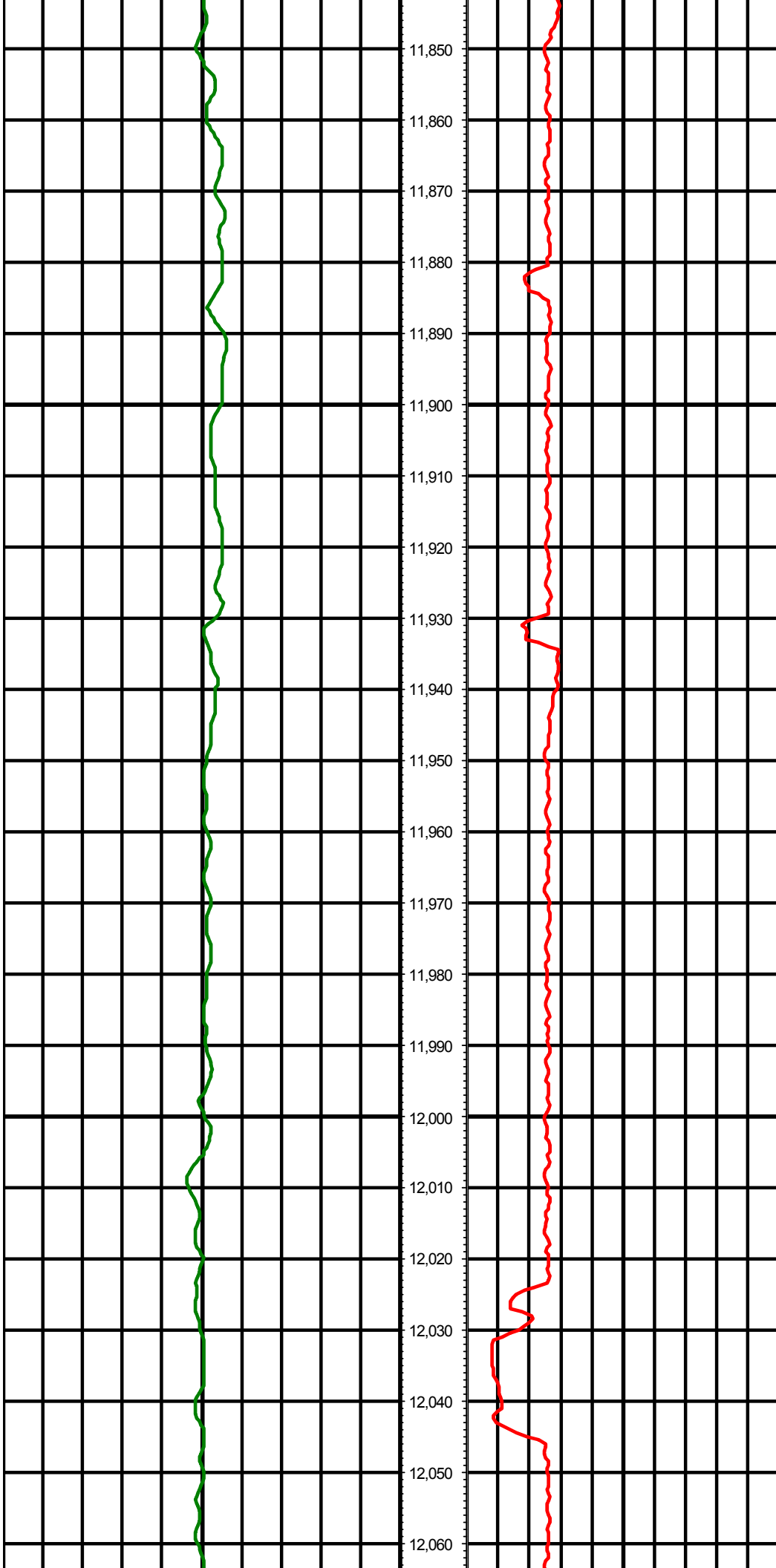


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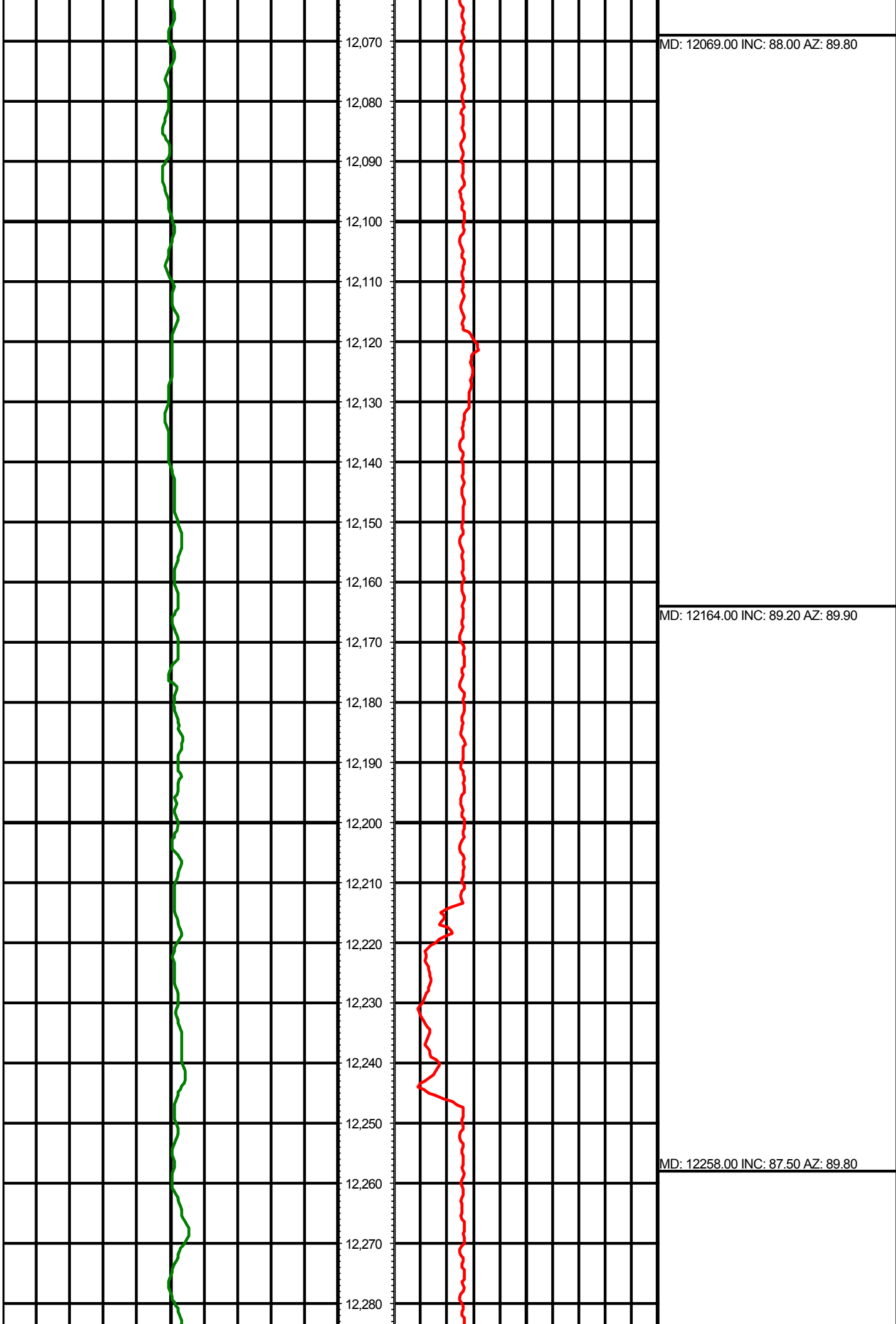
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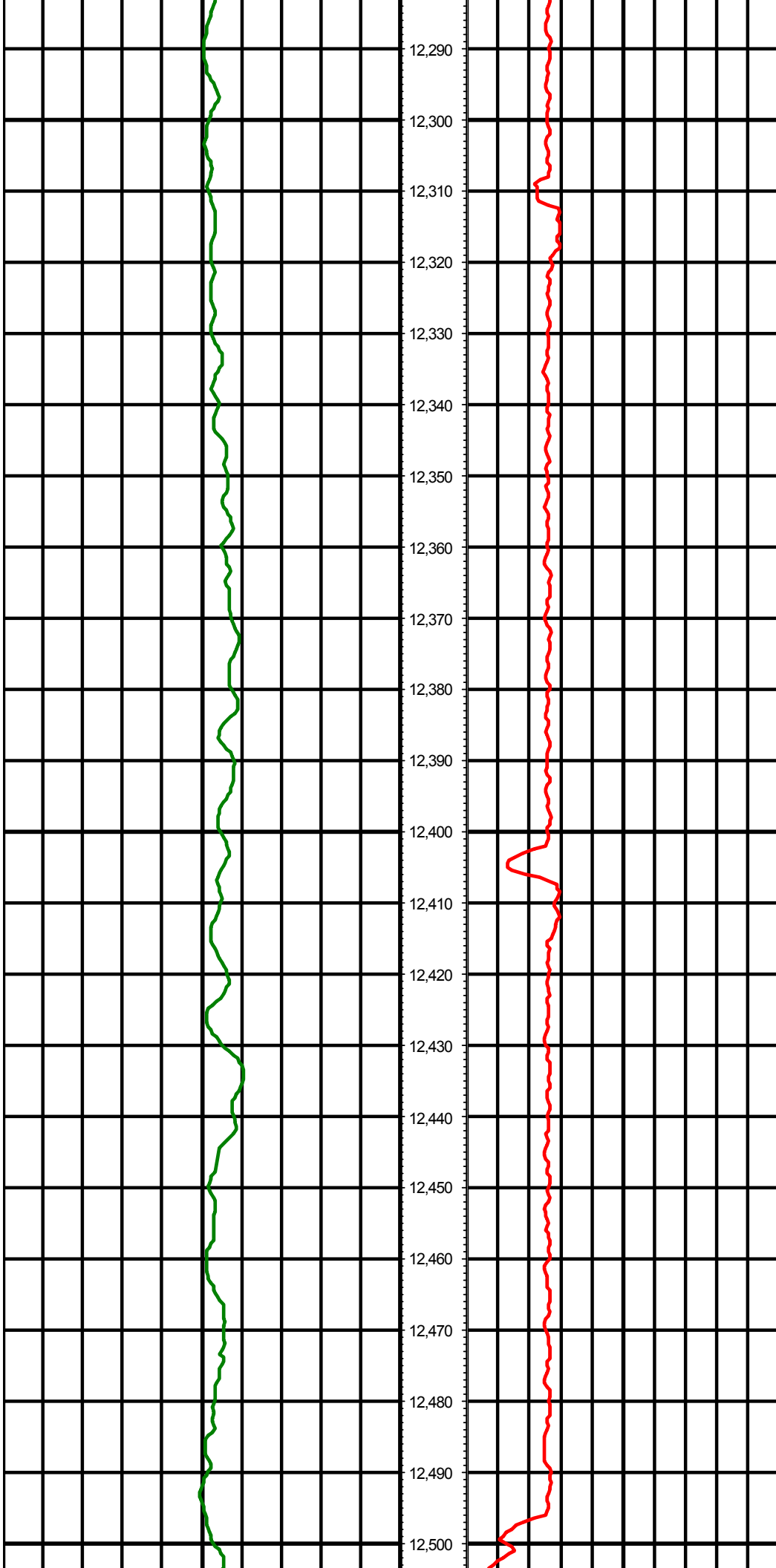




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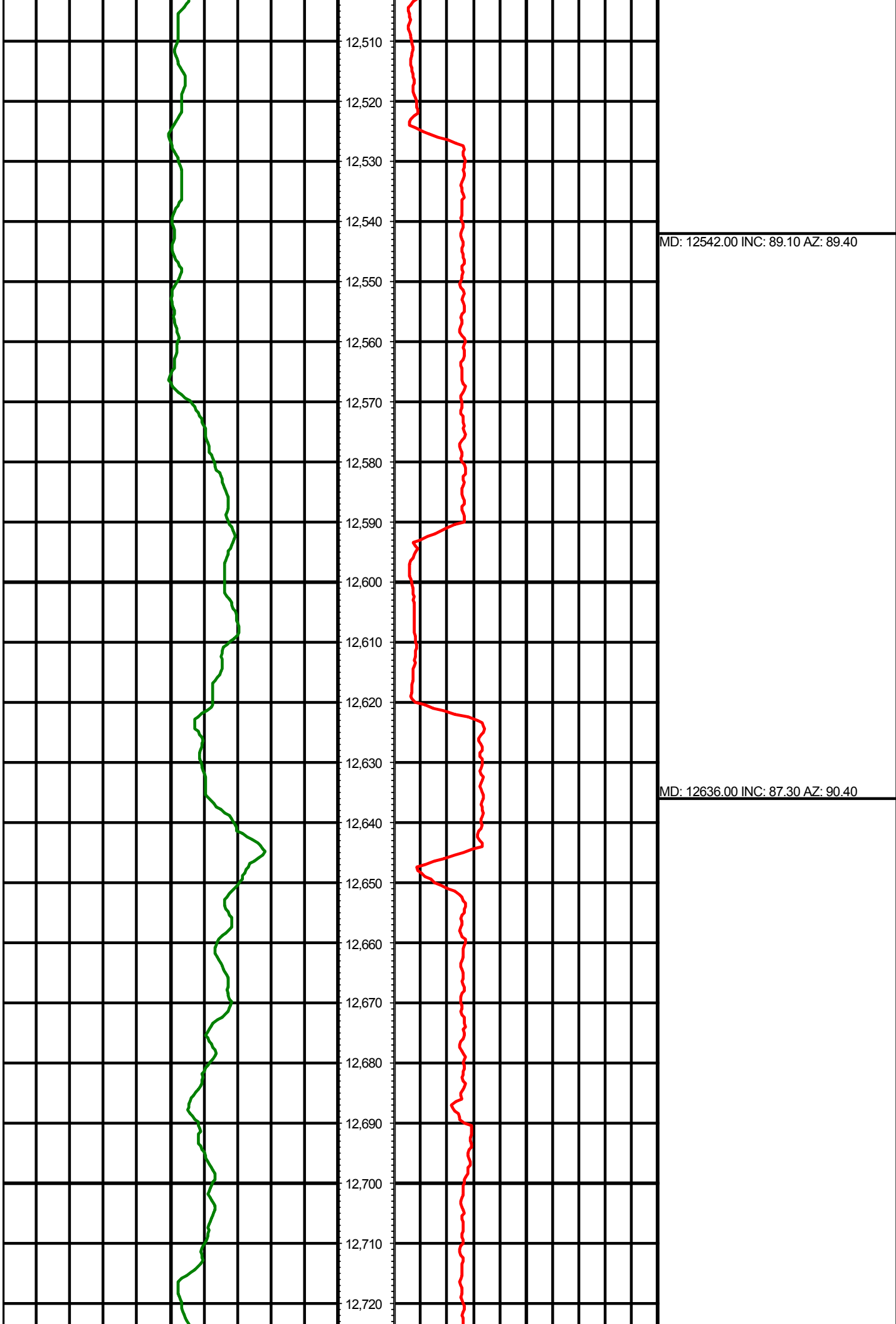
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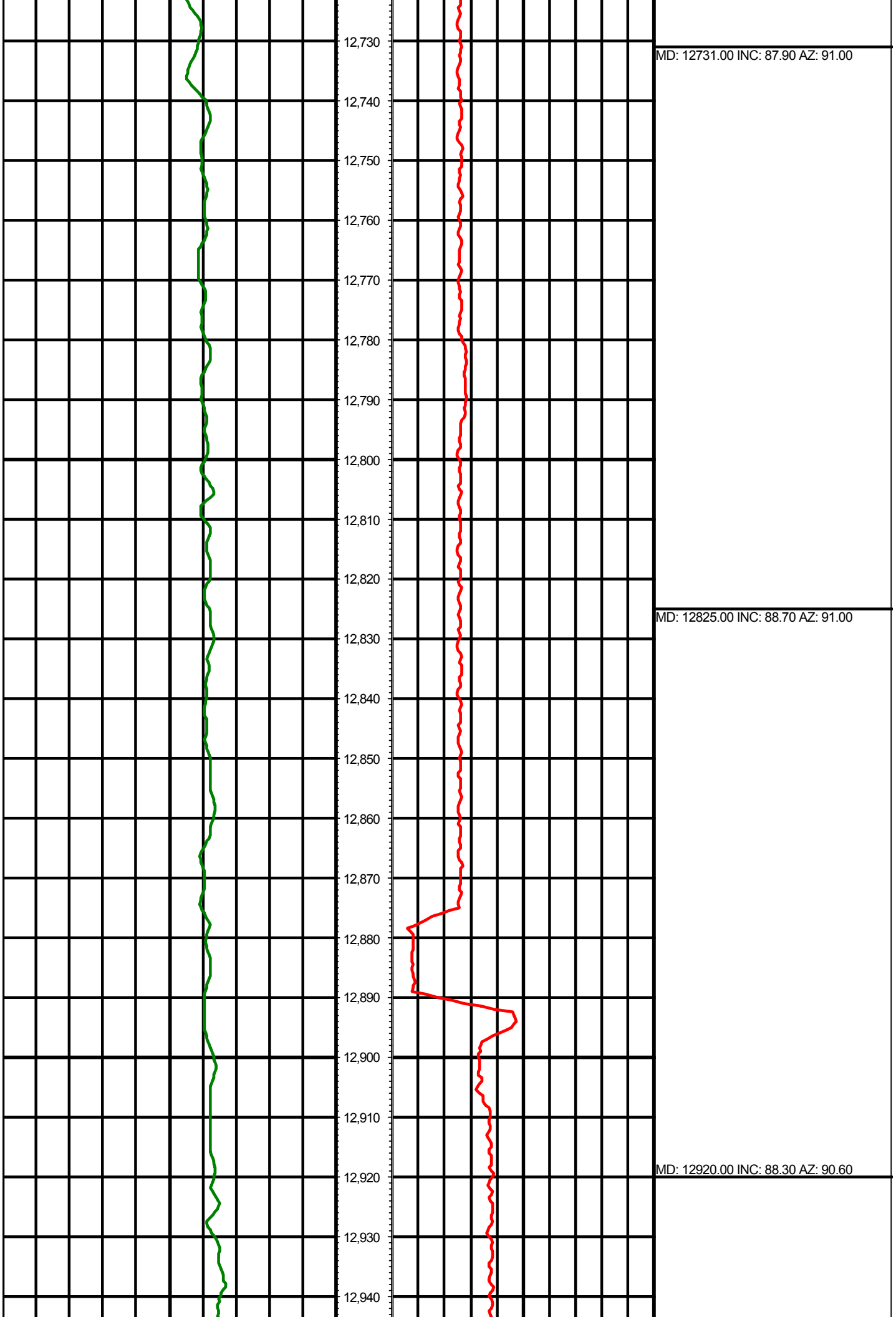


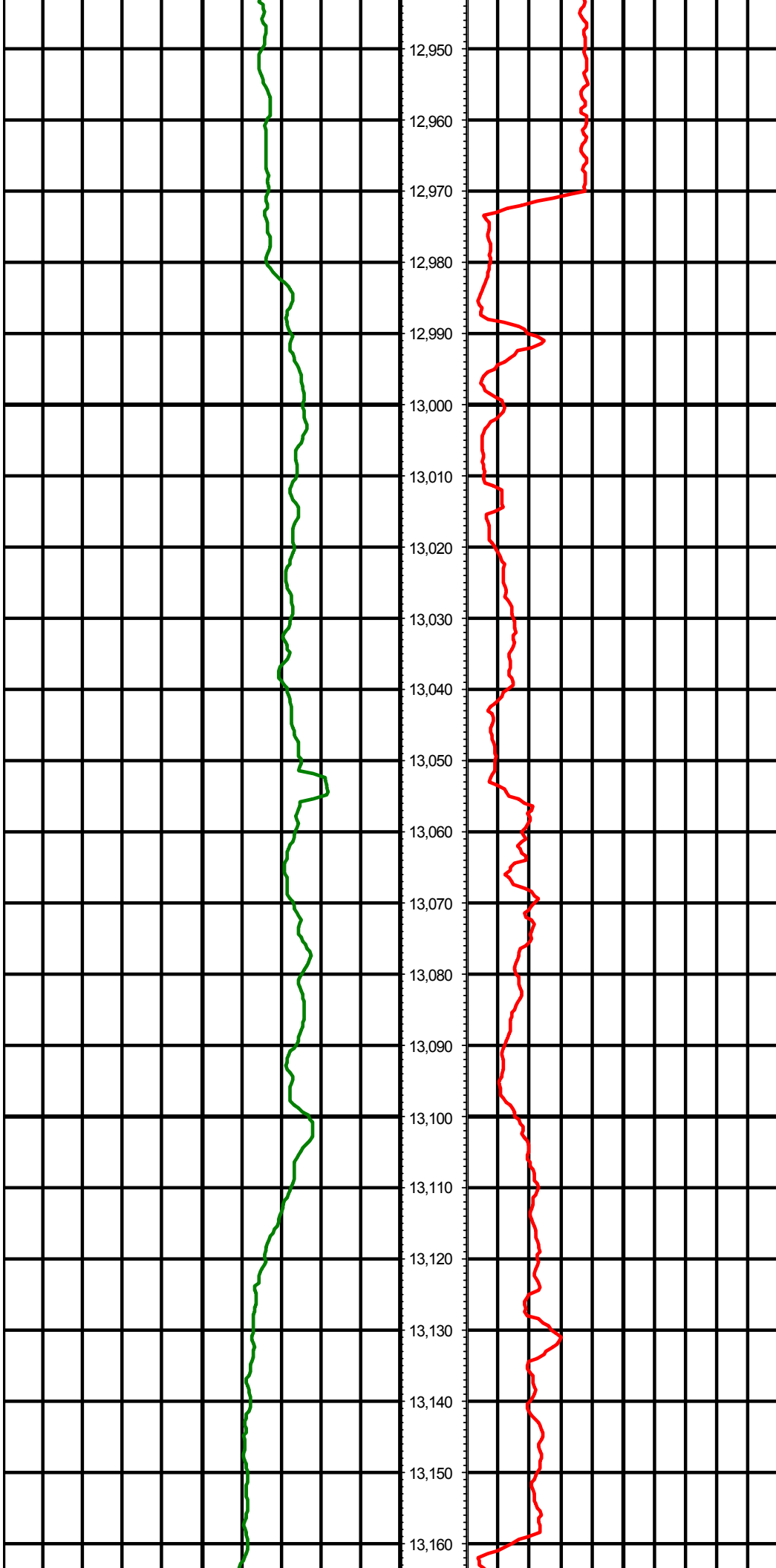


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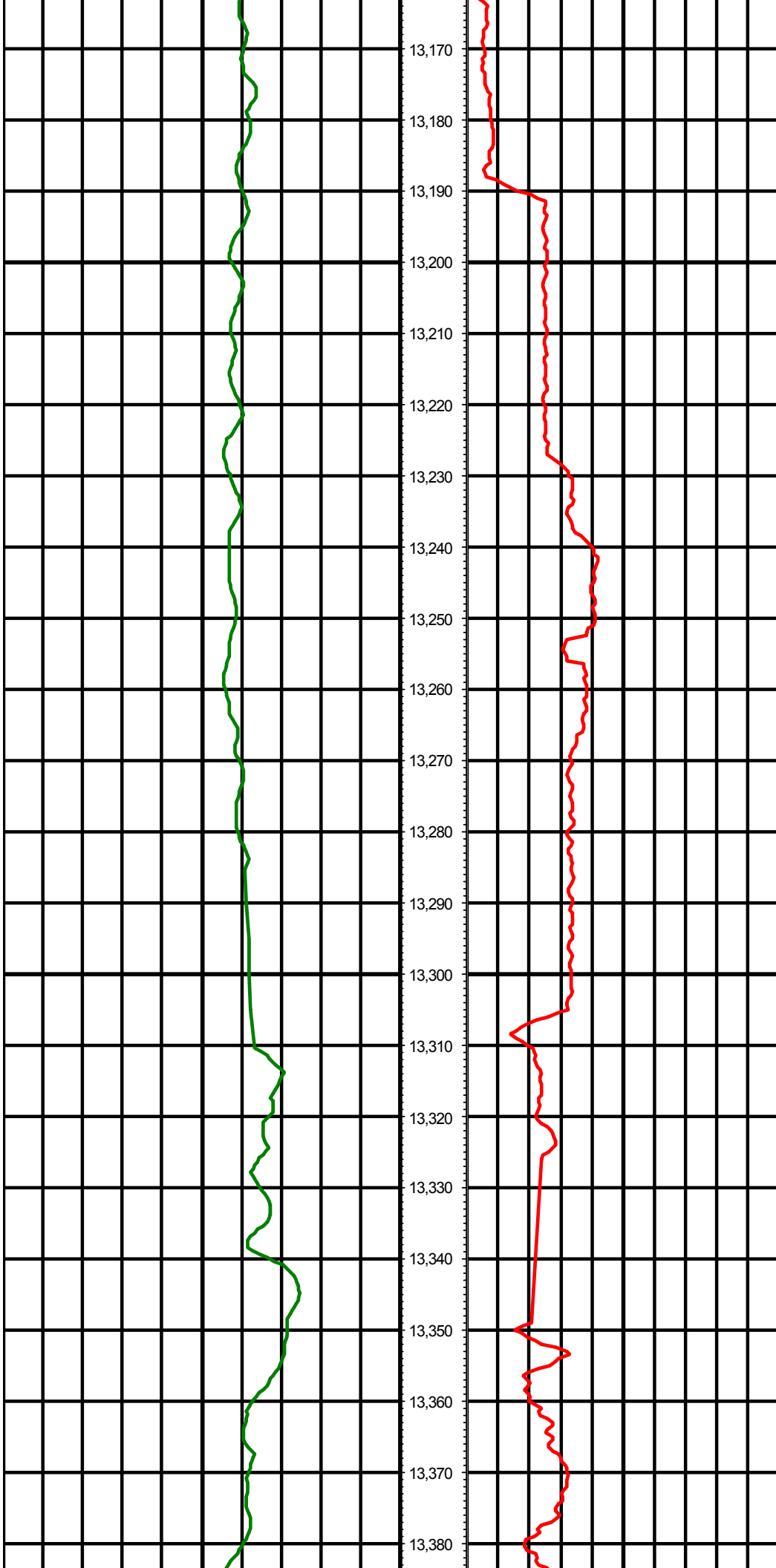






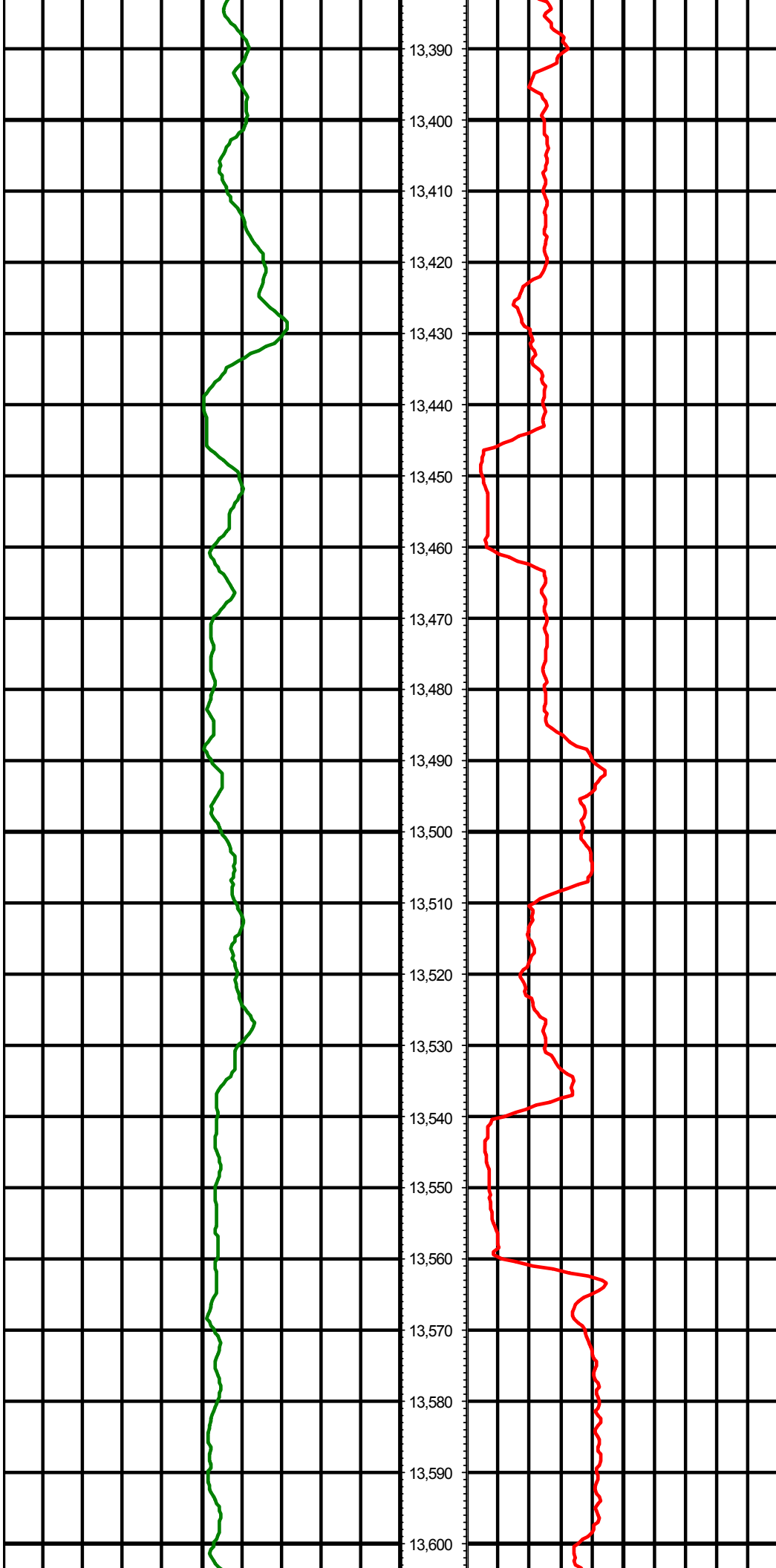
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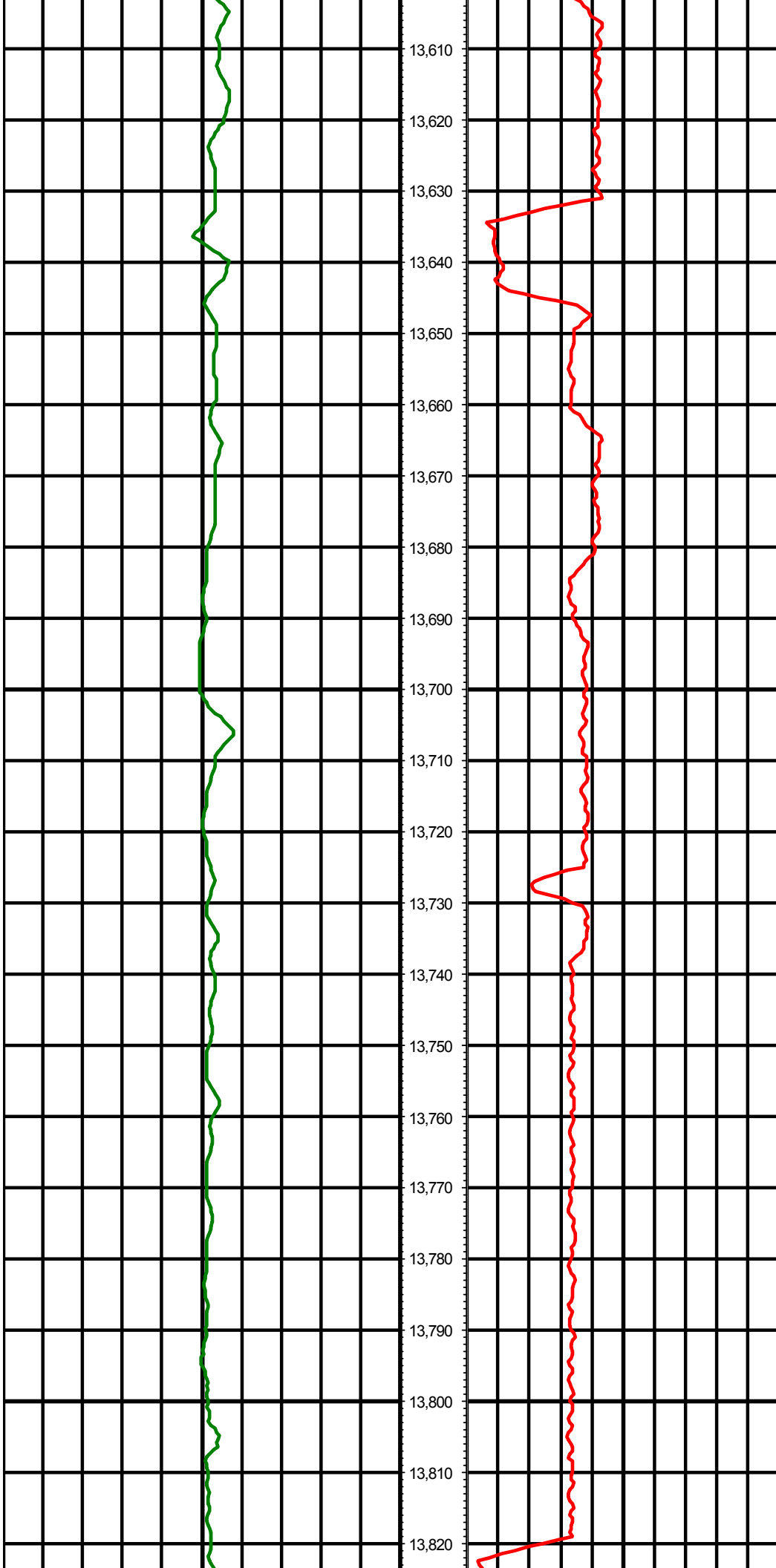


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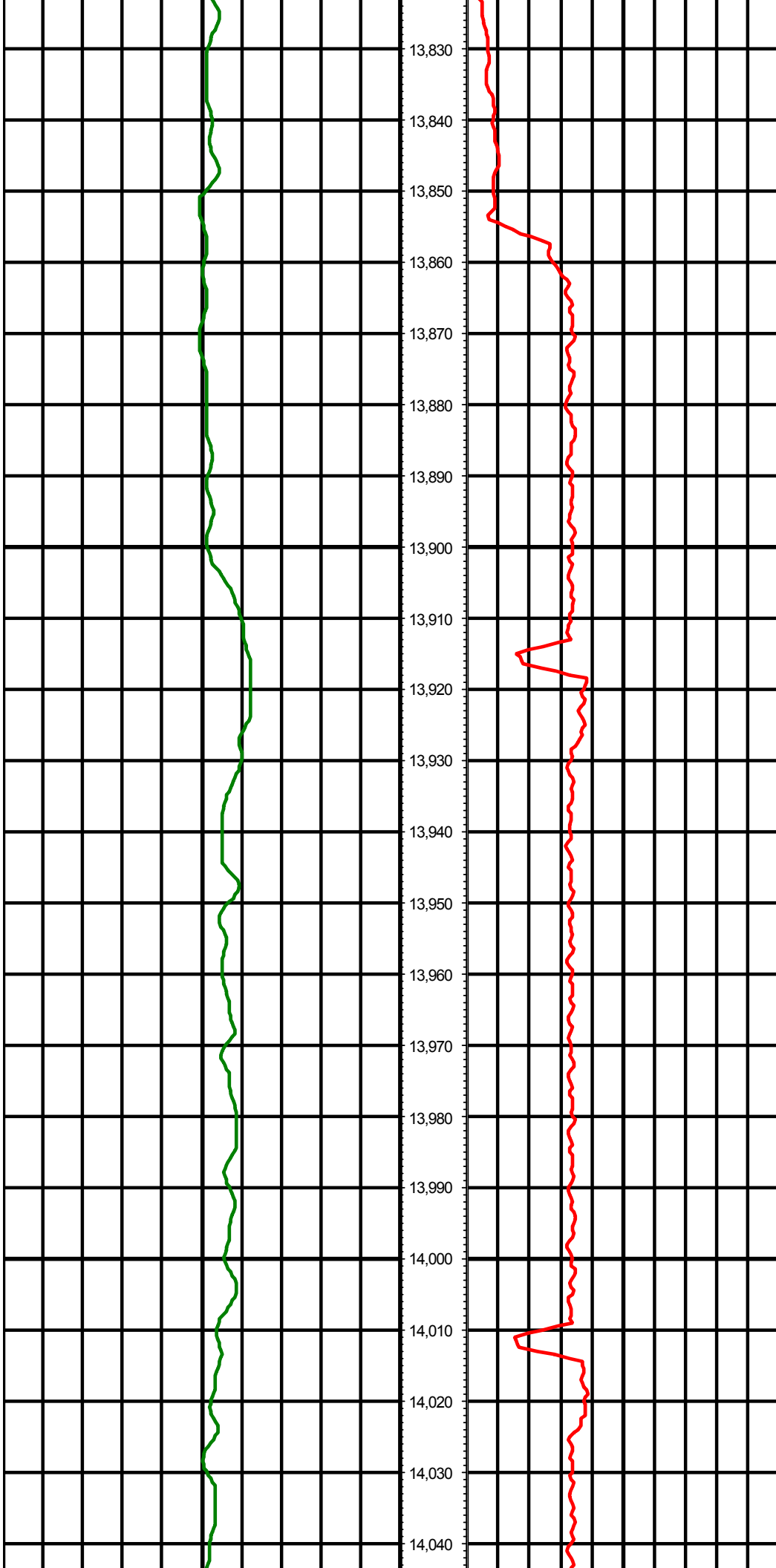
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MD: 13959.00 INC: 88.40 AZ: 88.40

