



Cathedral Energy Services  
1949 North Pyrite Road  
Casper, Wyoming 82604

**145186**

5":100' - MD

7/15/2014 9:12:47 AM

**CATHEDRAL**

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

**Country:** U.S.A.

**State / Province:** Colorado

**County / Parish:** Weld

**Started:** 04/17/2014 06:00 PM

**API/UWI:** 05-123-38070-00

**Field:** Wattenberg (Codell)

**Well:** Edith Ann-Duckworth 4F-21H-O268

**Rig:** Patterson UTI Drilling 272

**Ended:** 06/24/2014 04:00 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:** A. Clark

**Comp. Emp:** Chris Clemens

Maximum Temperature: 264°F

### Location

**Latitude:** 40.117670

**Longitude:** -105.003500

**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	974
8-3/4	974	7943
6-1/8	7943	17115

### Casing Data

Size	From	To
9-5/8	0	925
7	0	7930
4-1/2	0	17100

### Bit Sizes

Size	From	To
12-1/4	0	974
8-3/4	974	7943
6-1/8	7943	17115

### Mud Data

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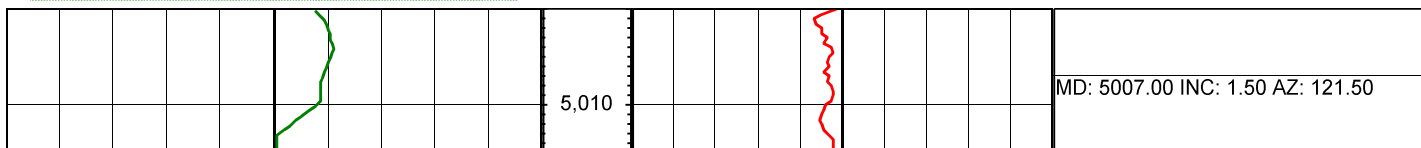
### Tool Run Data

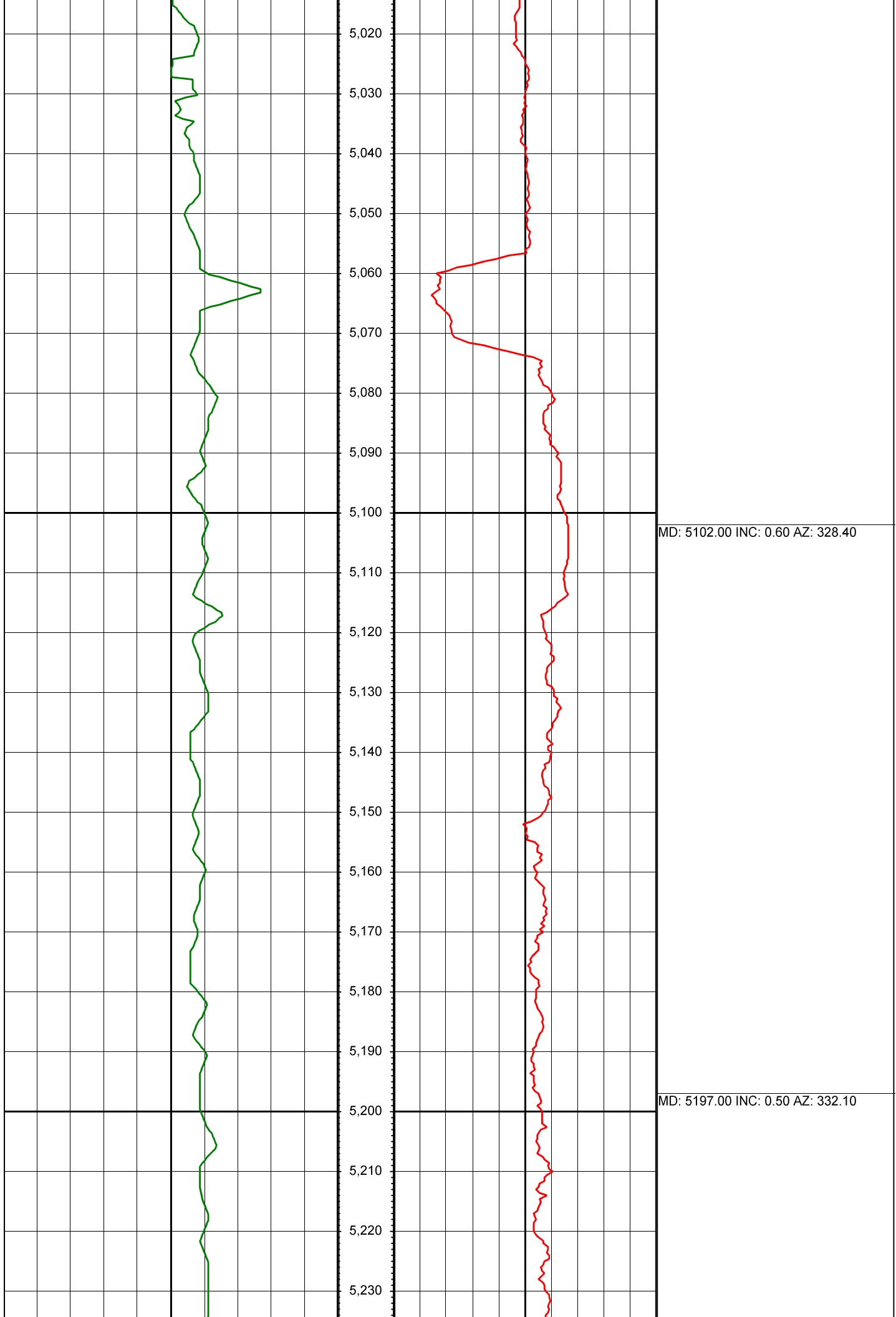
Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
1519	35.99	0	4/18/2014 12:45:27 AM	5000	4/21/2014 12:30:27 PM	7943
1519	37.97	0	6/14/2014 2:00:27 AM	7943	6/15/2014 6:30:27 PM	9649
1278	37.87	0	6/15/2014 8:00:19 PM	9649	6/20/2014 5:00:19 PM	15556
1278	37.87	0	6/20/2014 7:00:45 PM	15556	7/16/2024 4:30:45 AM	17115

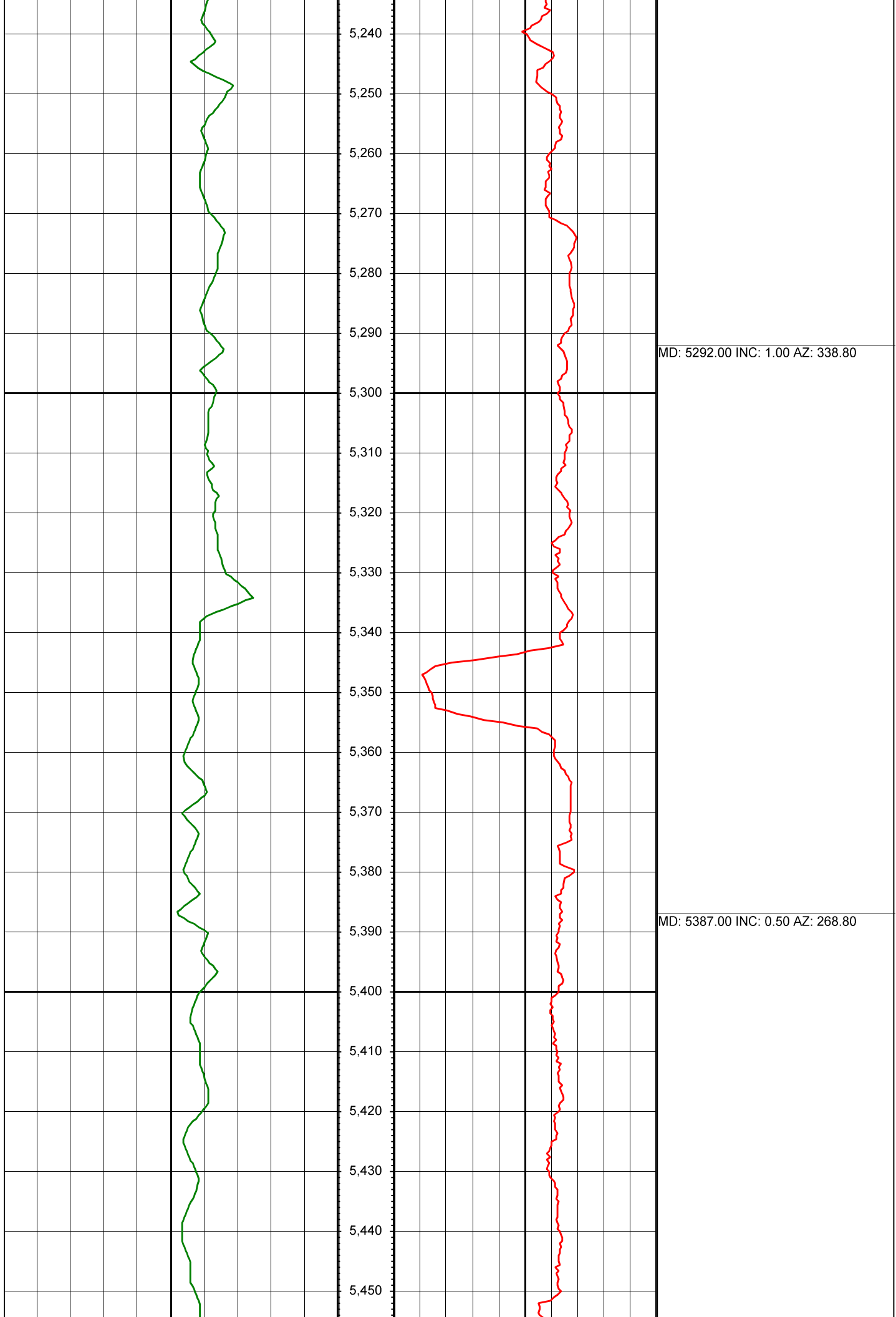
*All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not except in the case of gross or willful negligence on our part, be liable or responsible for any loss, cost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

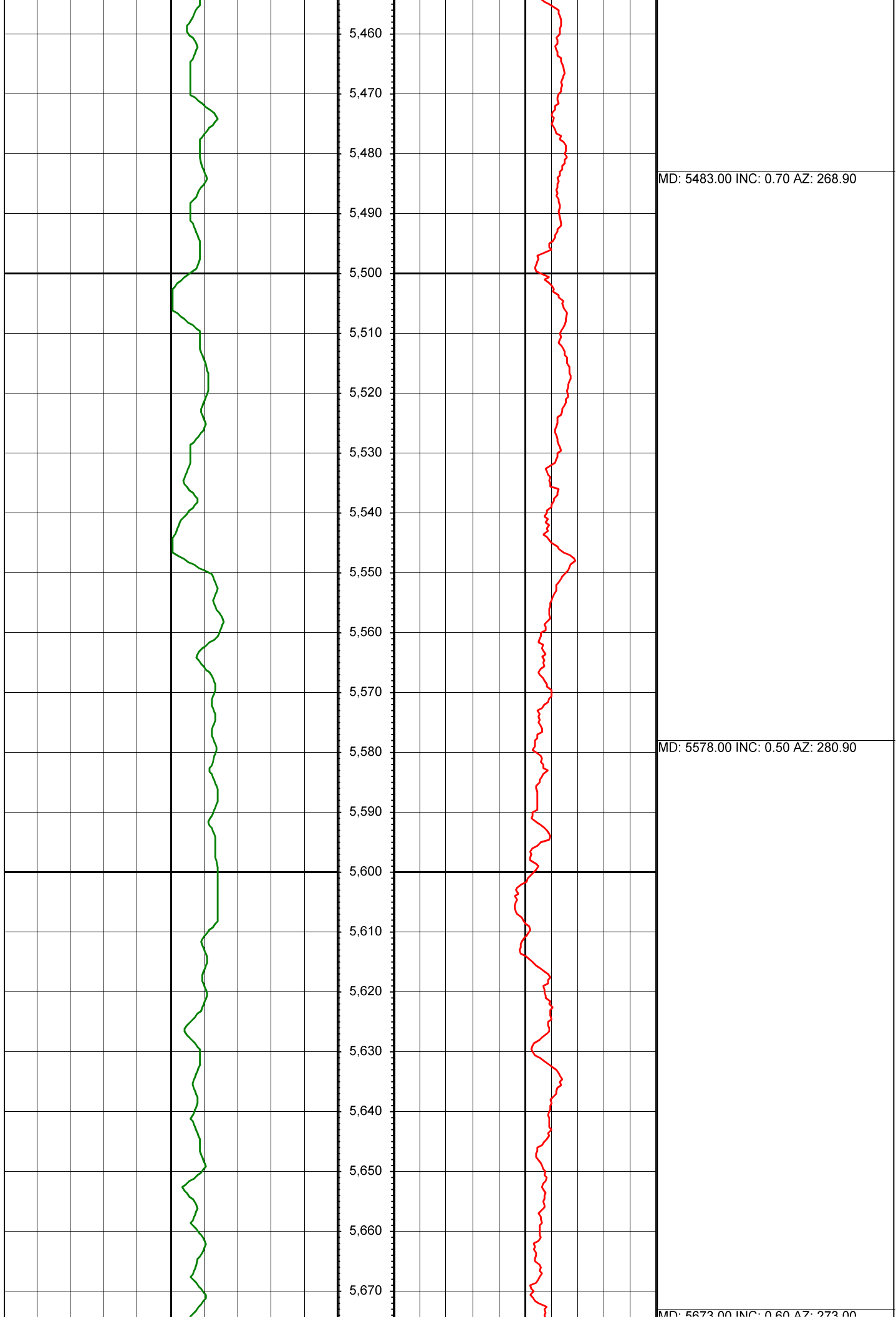
0.00      Gamma Ray (API)      150.00      MD      0.00      ROP (FT/HR)      600.00      Surveys (MD/INC/AZ)

150.00      2      300.00      FT

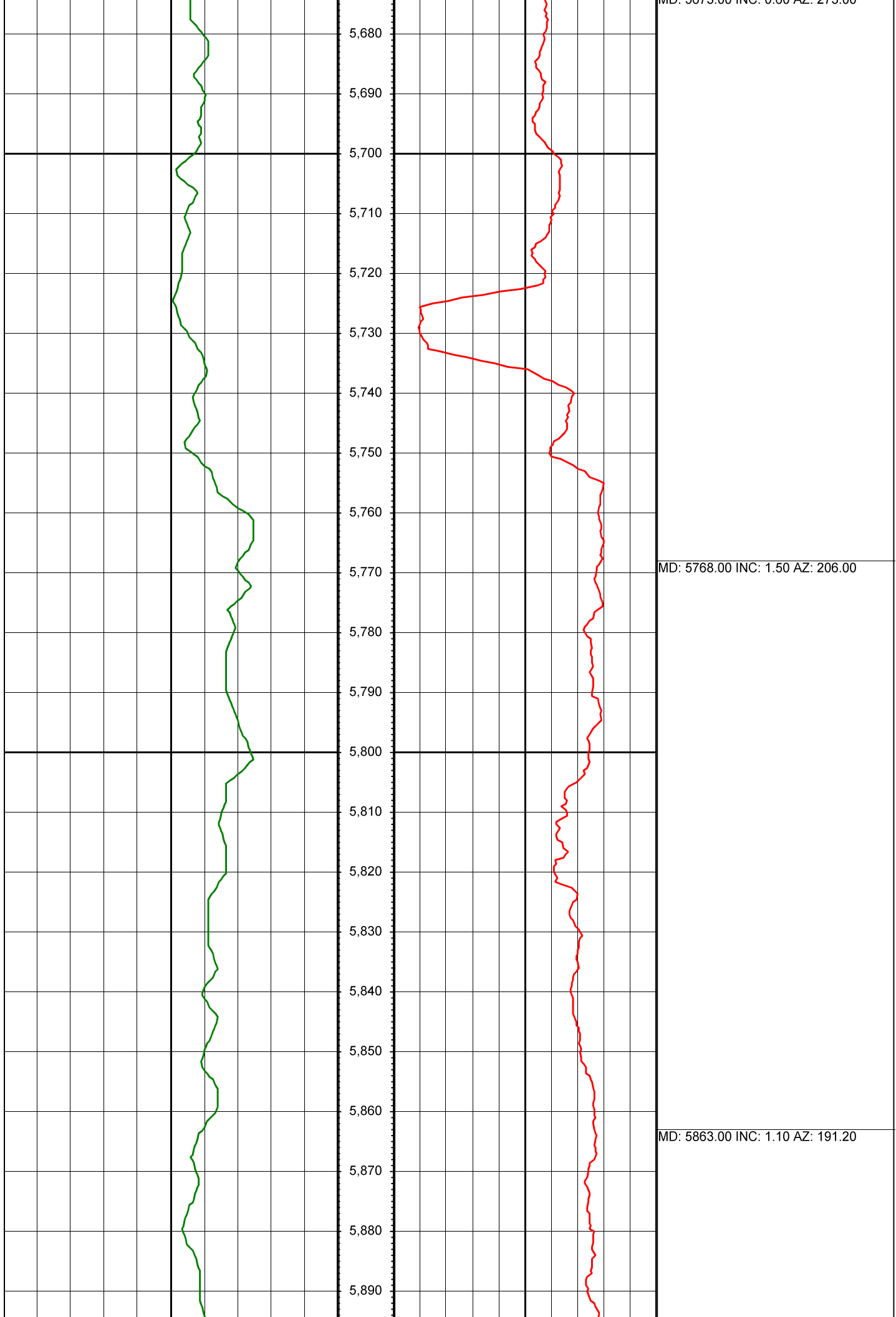


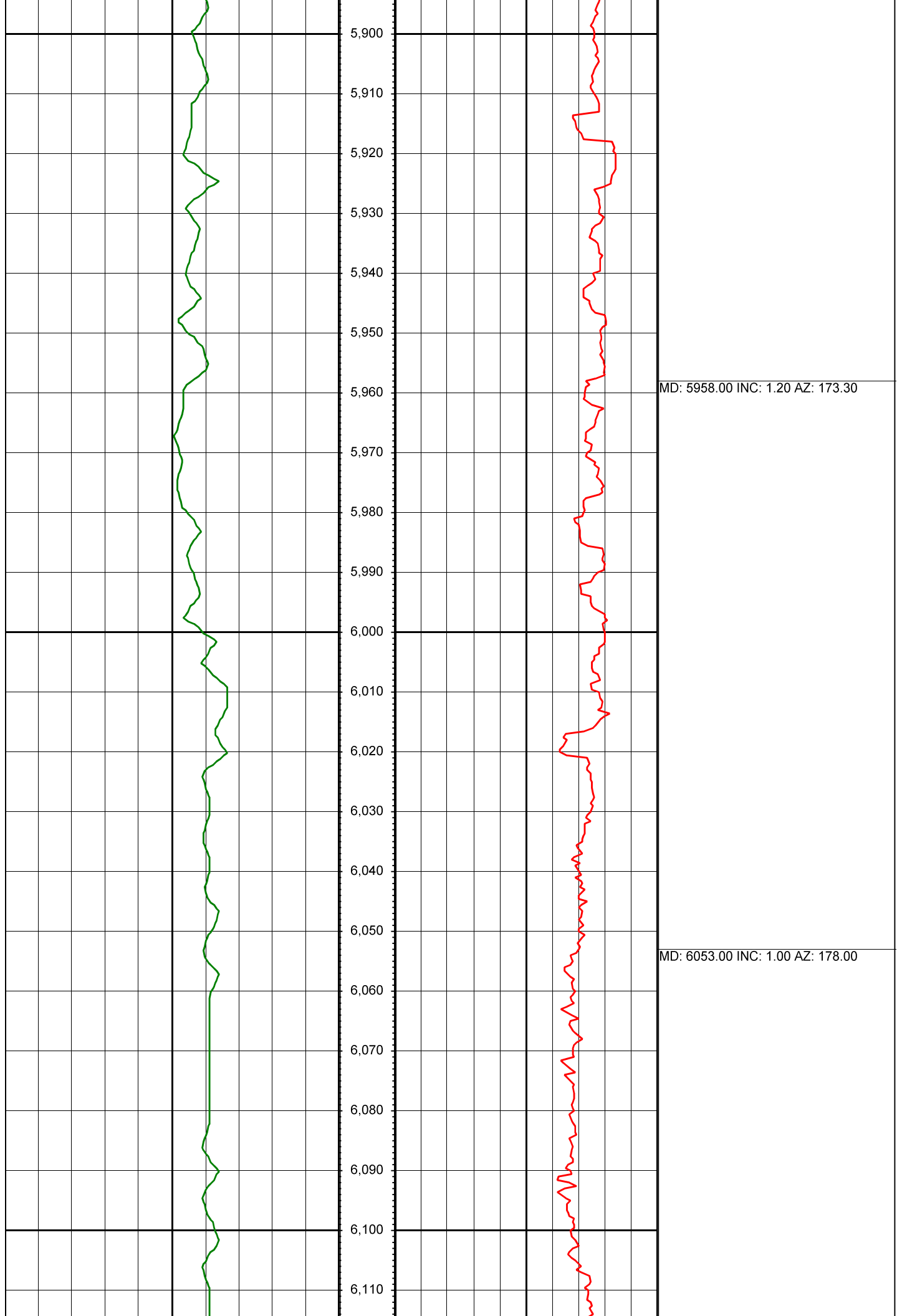


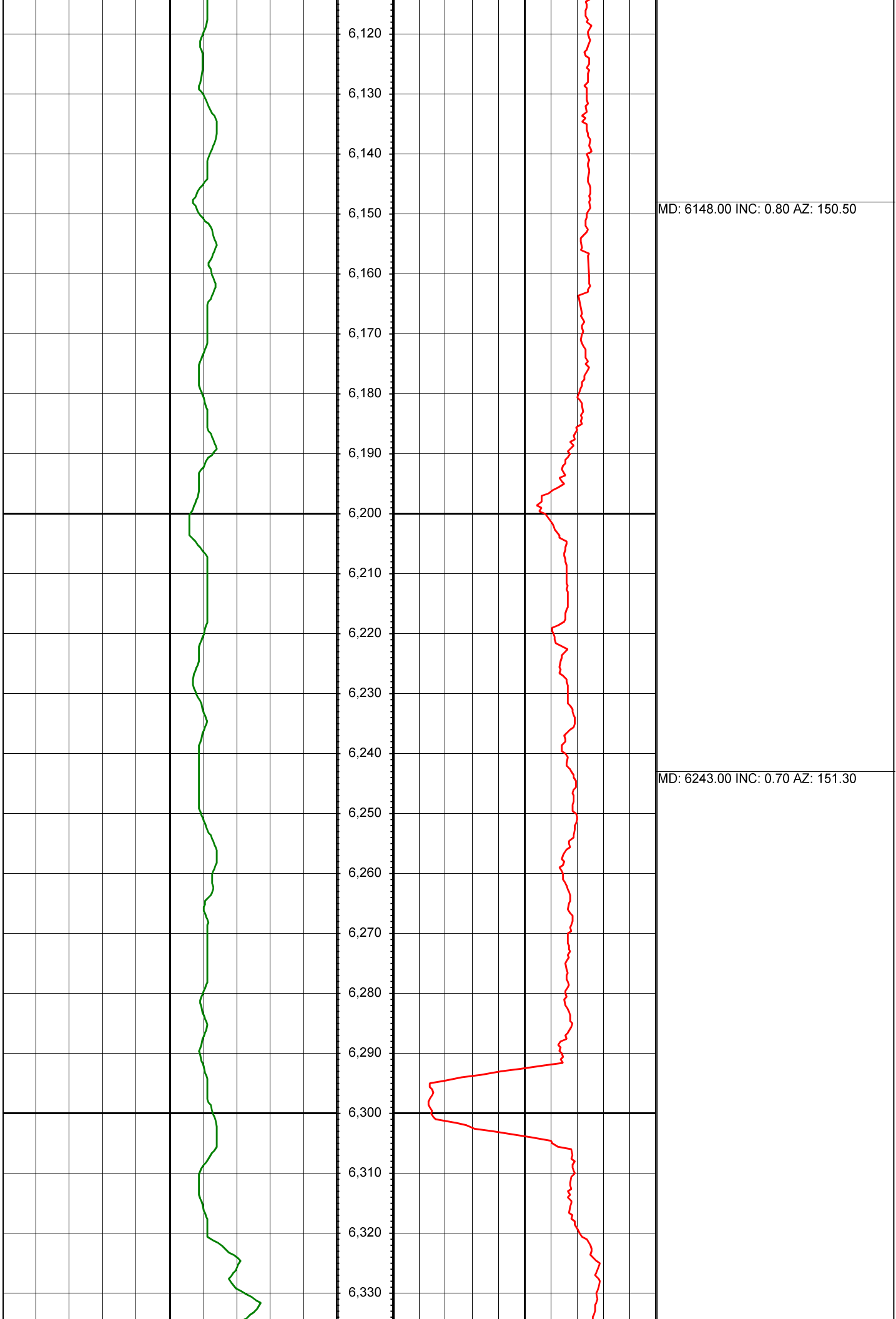


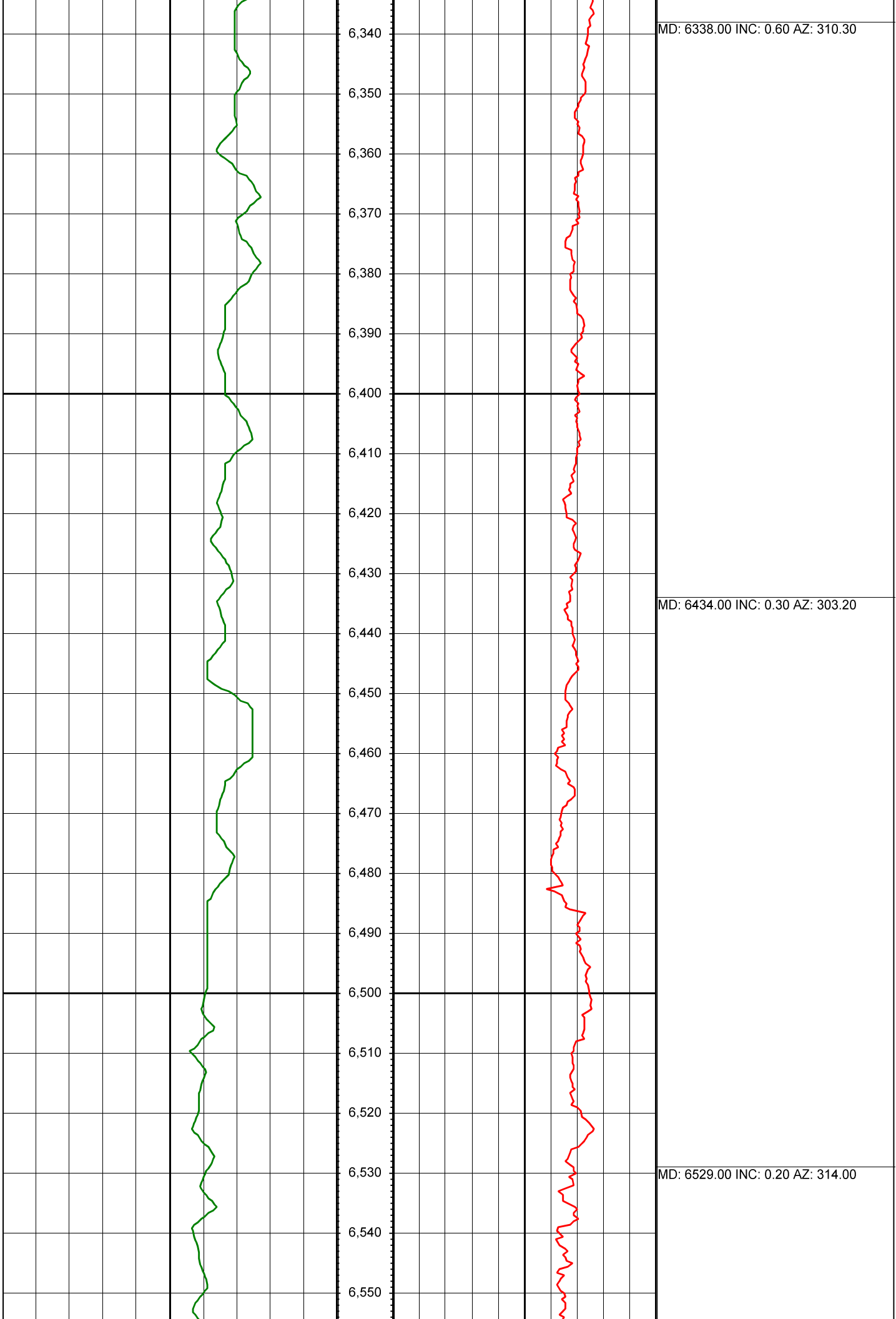


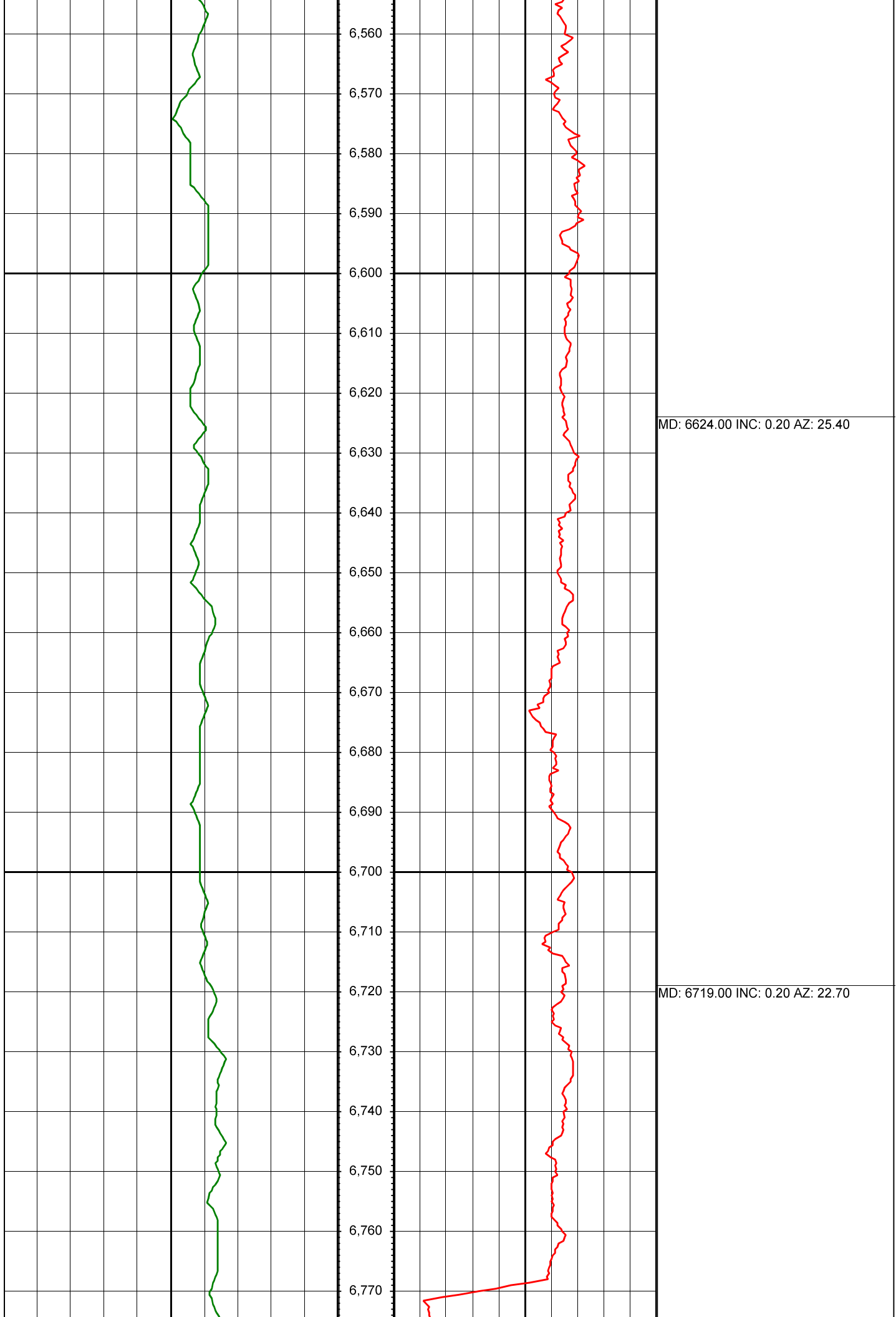


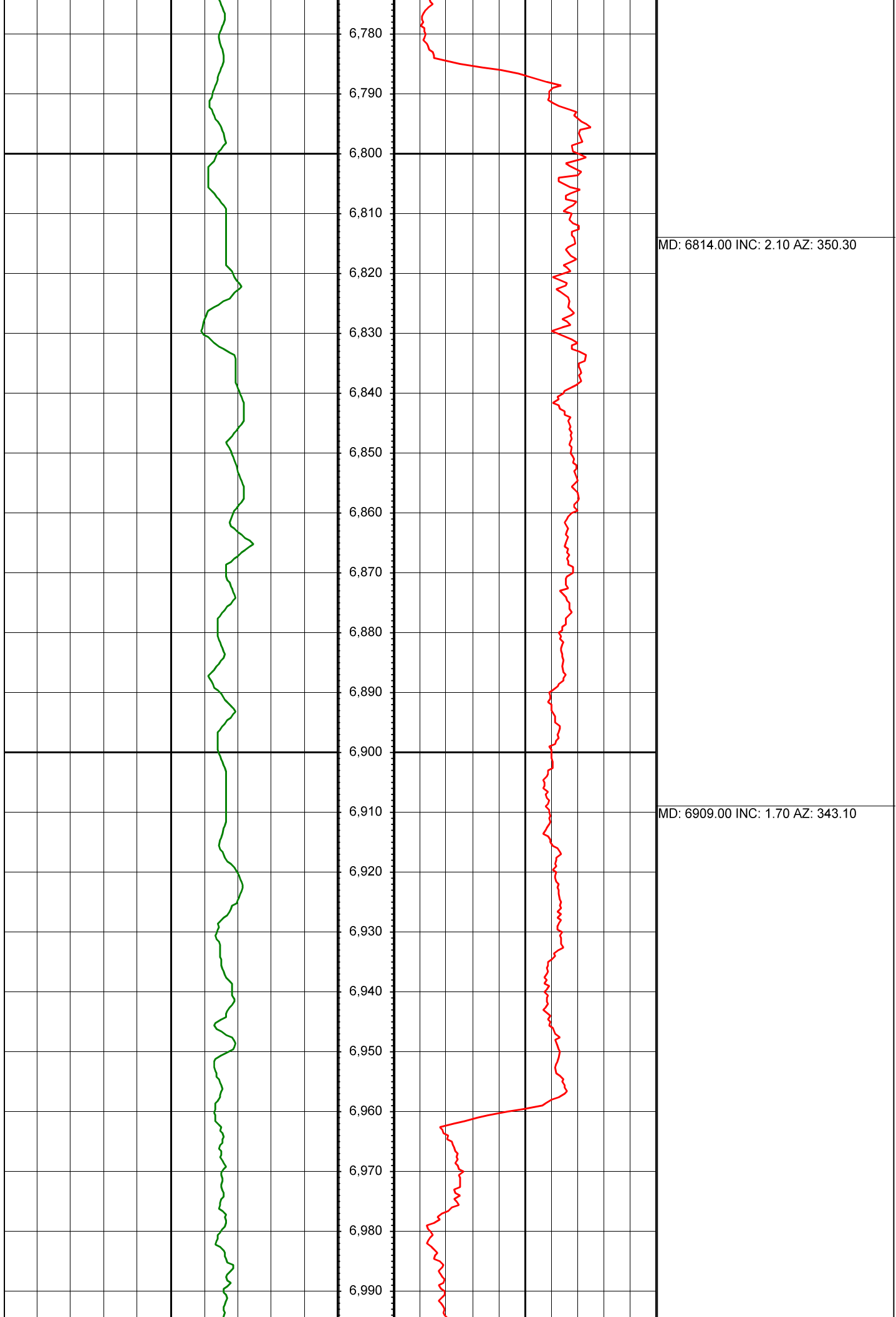


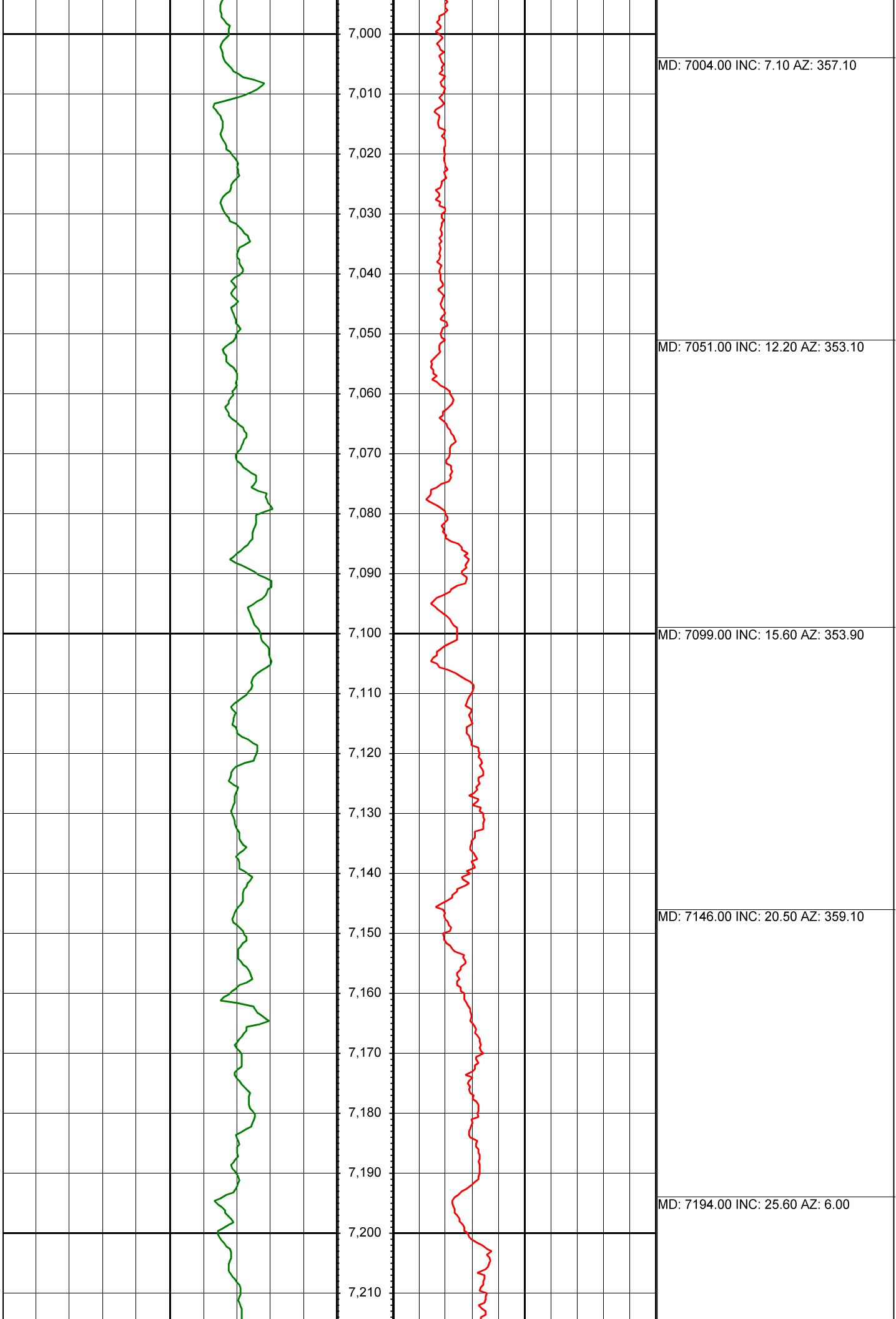


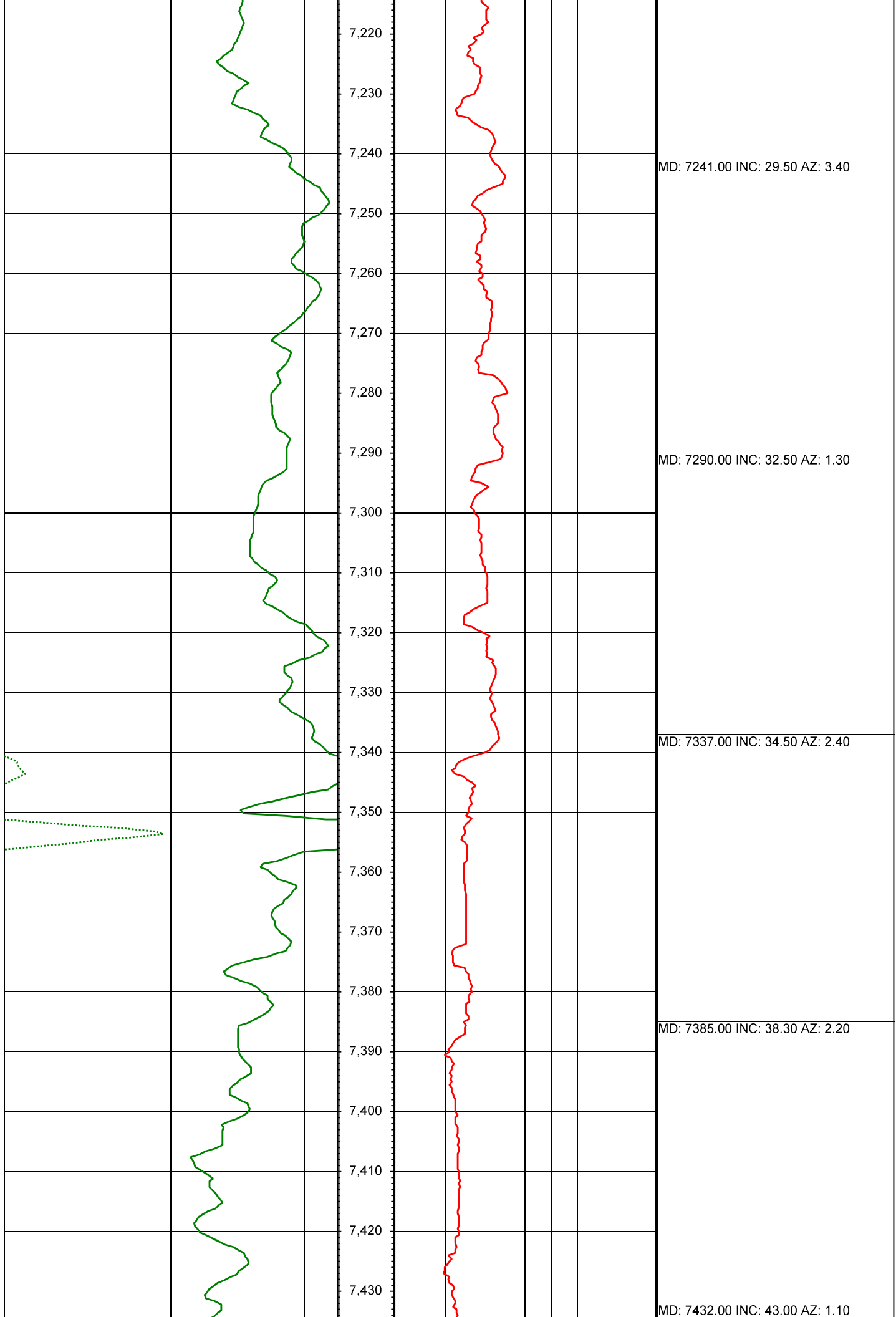




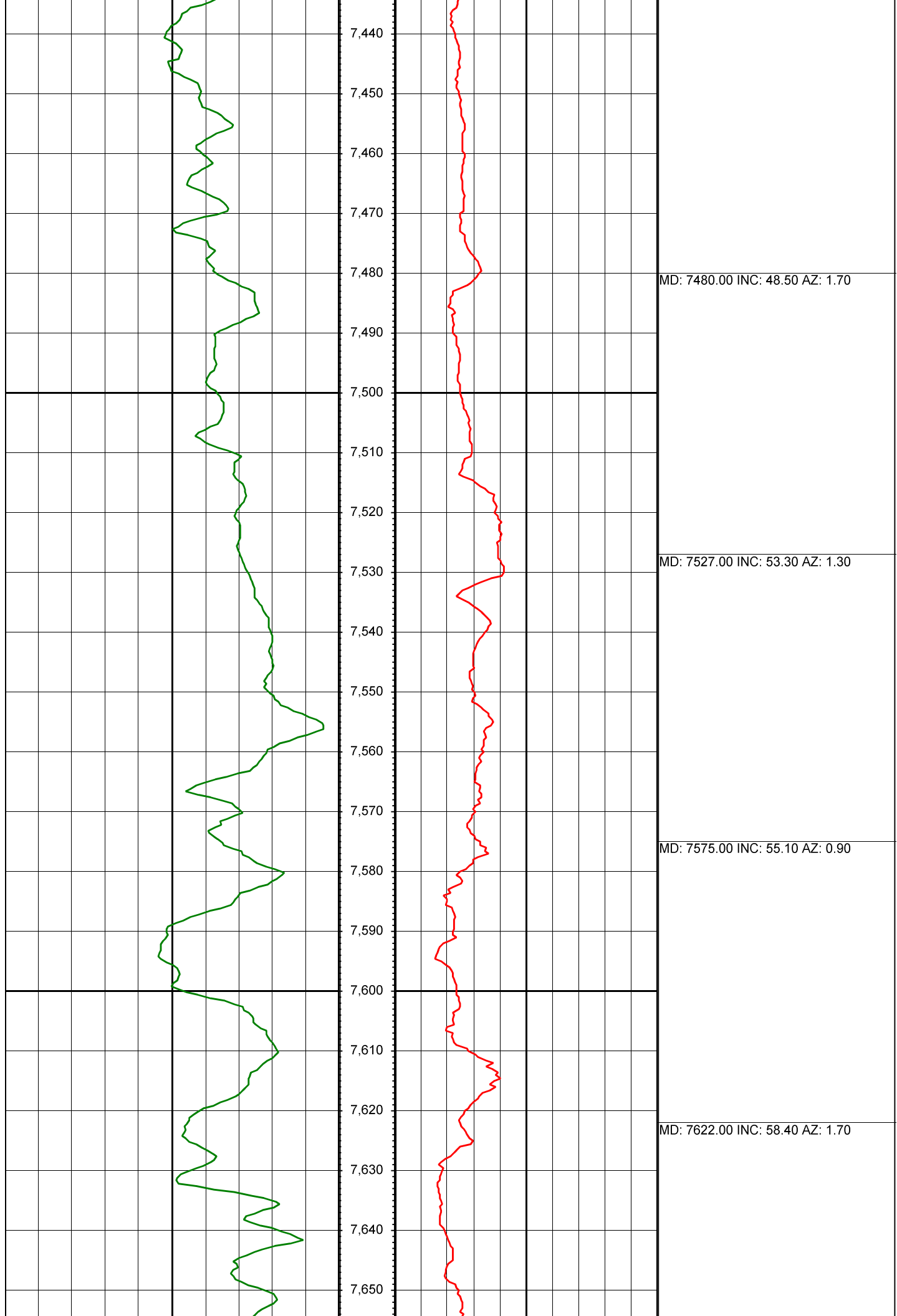


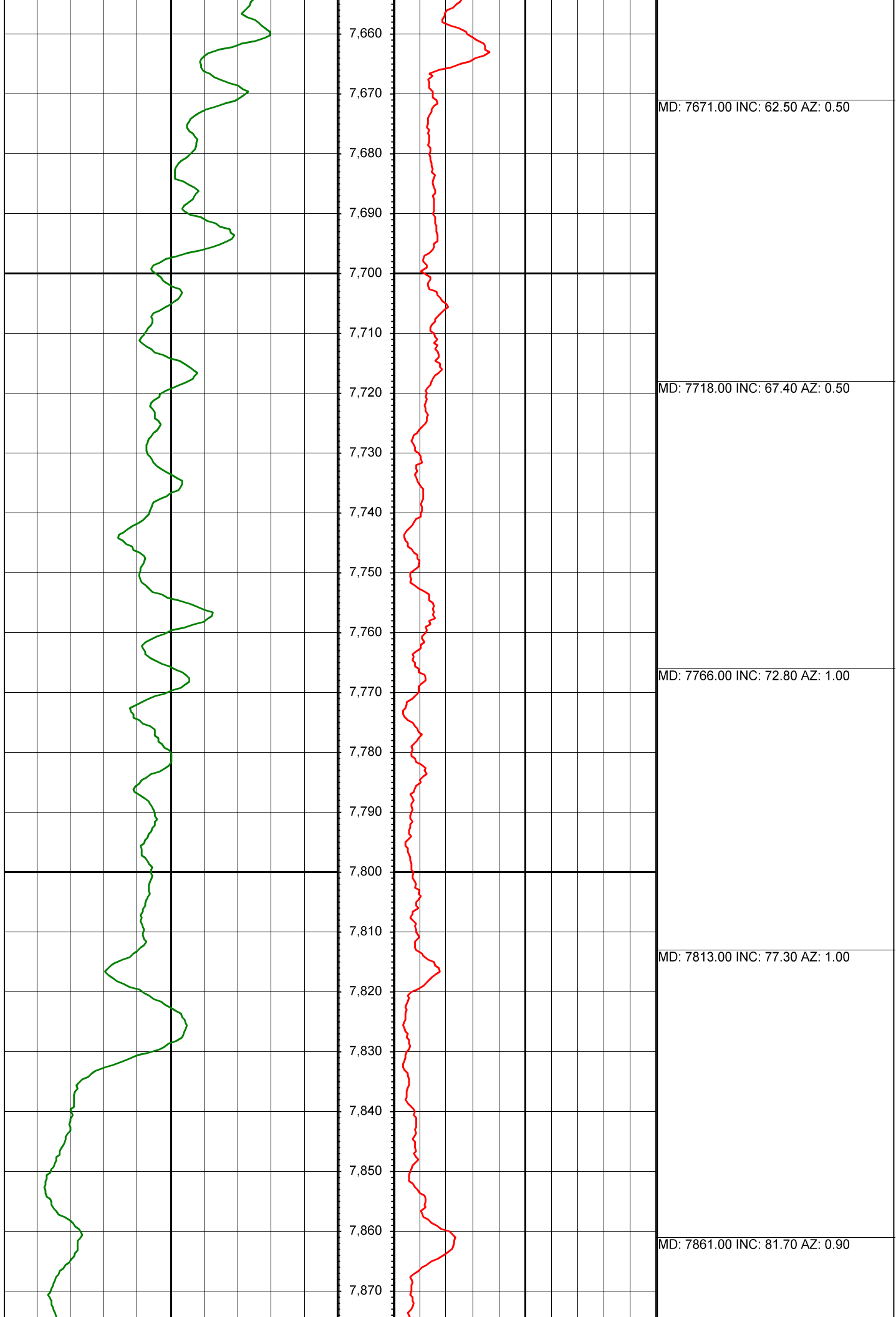


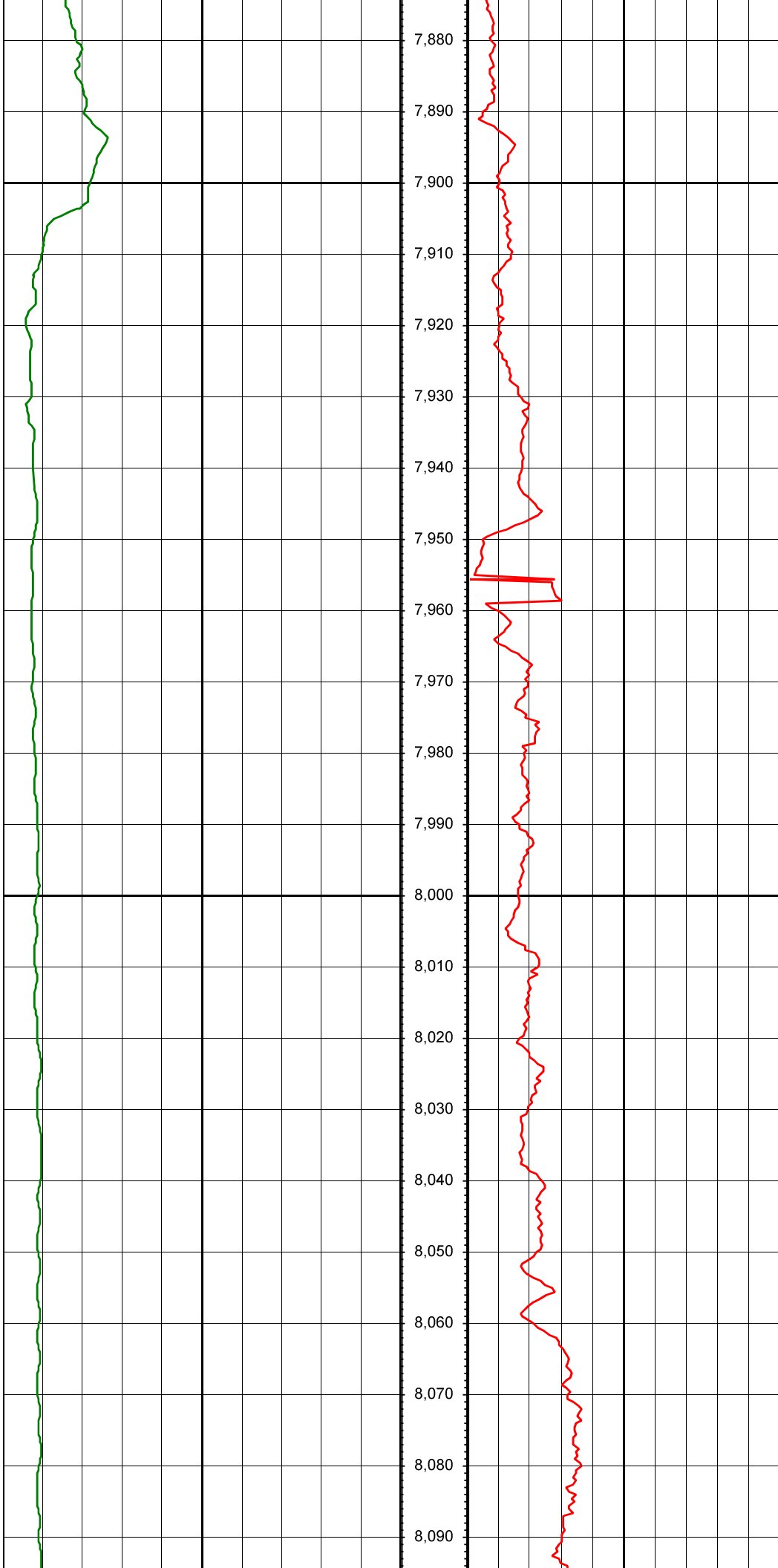












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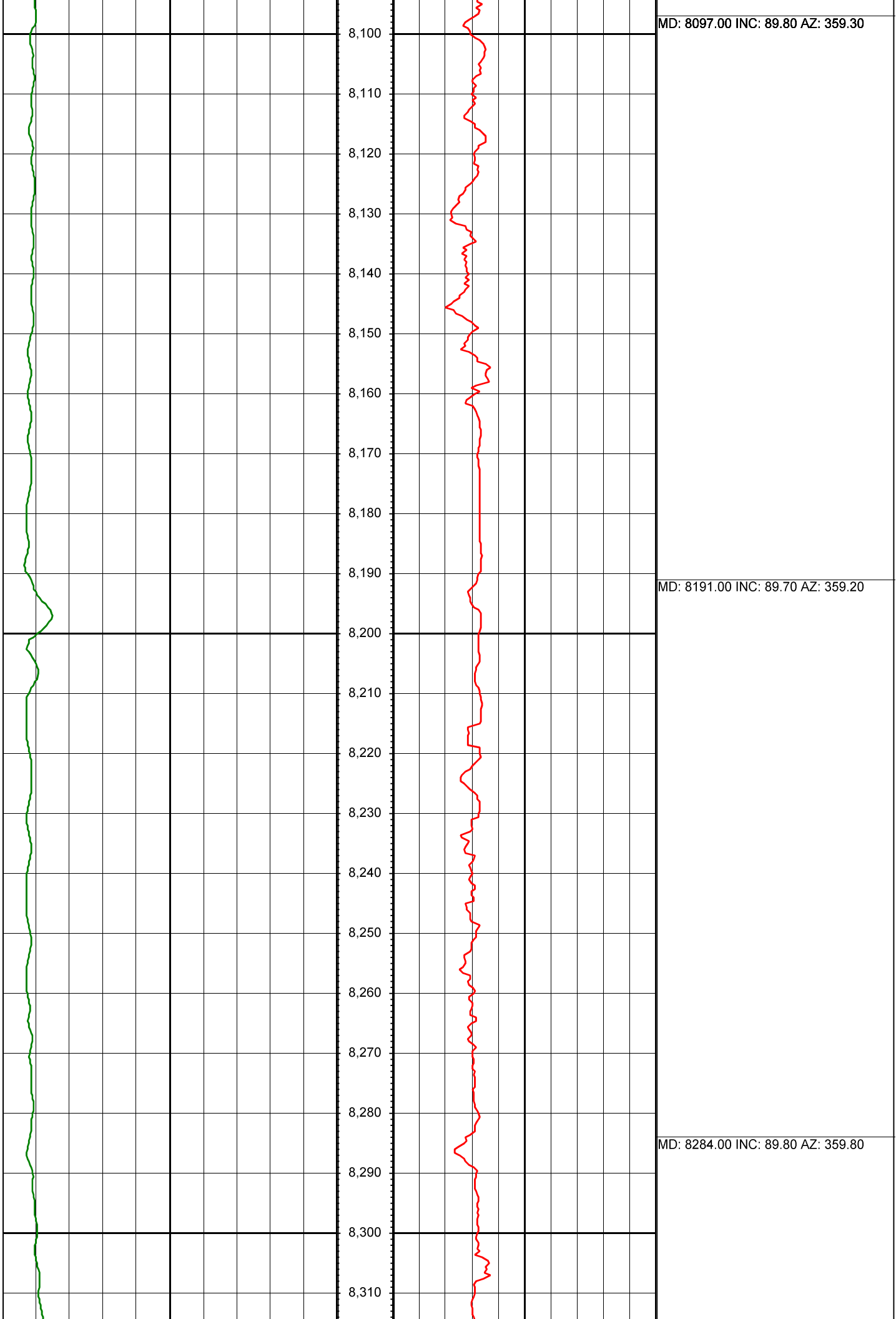
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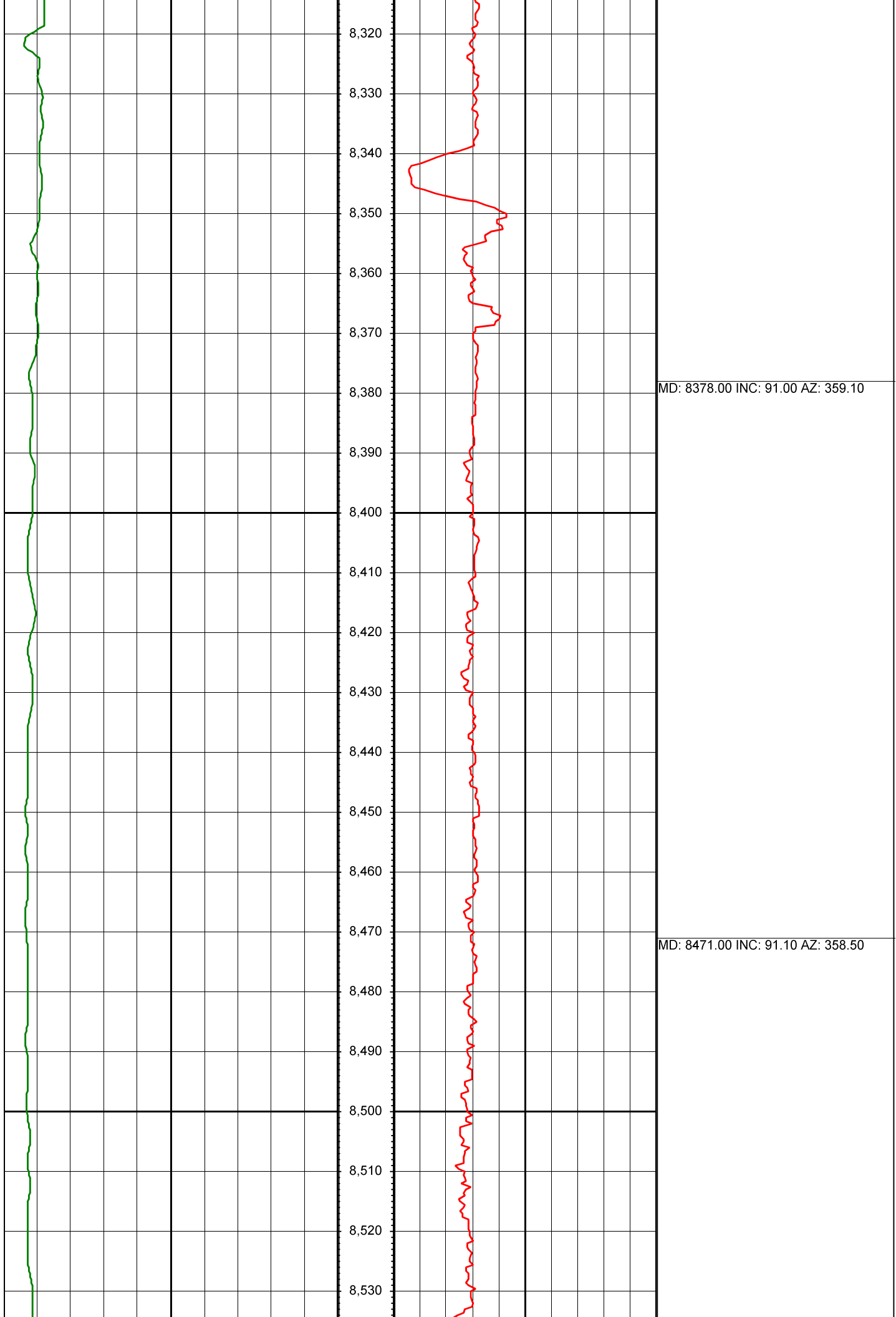
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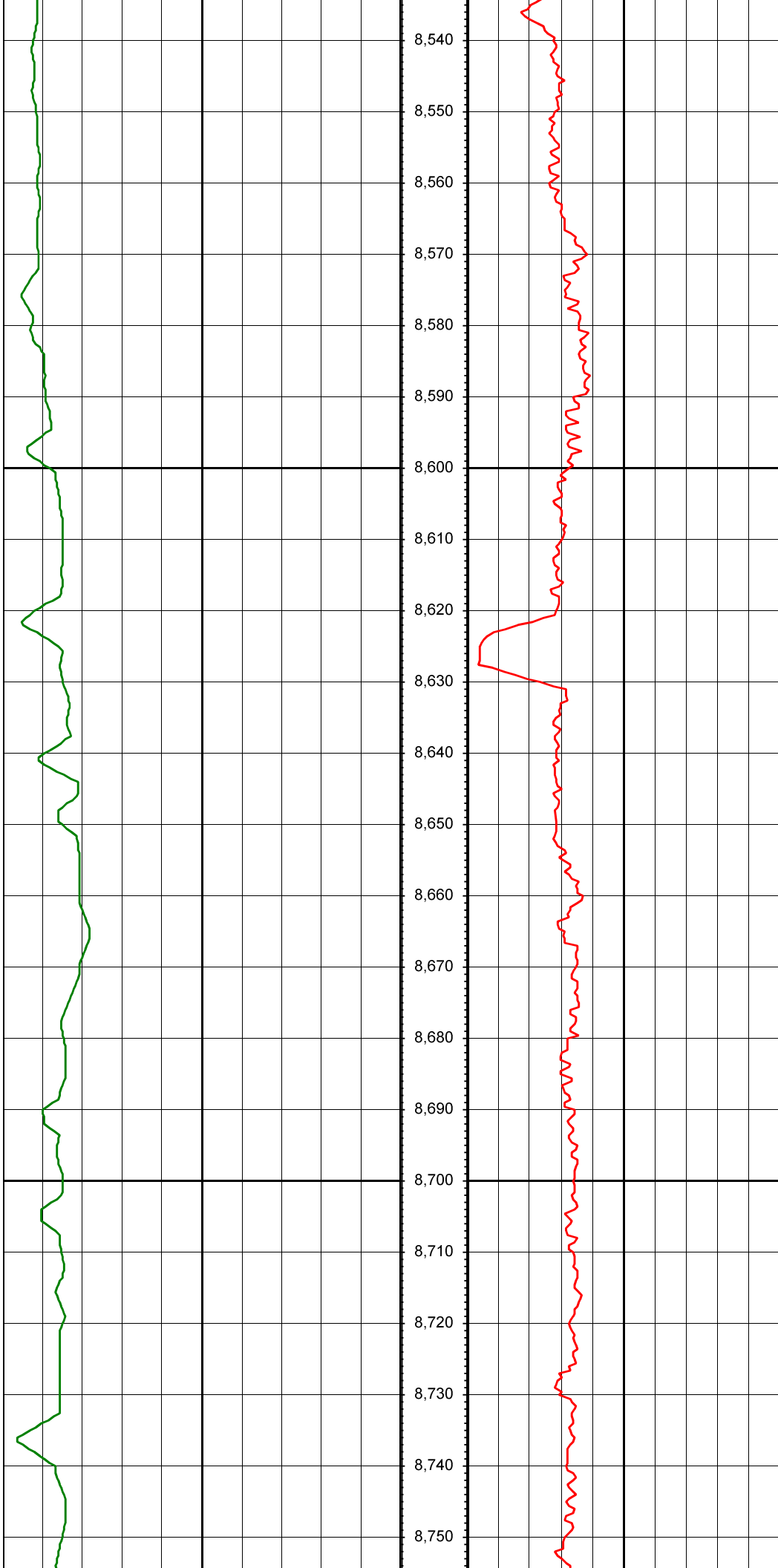
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MD: 7893.00 INC: 86.30 AZ: 0.30

MD: 8004.00 INC: 90.30 AZ: 359.90







MD: 8565.00 INC: 91.20 AZ: 358.70

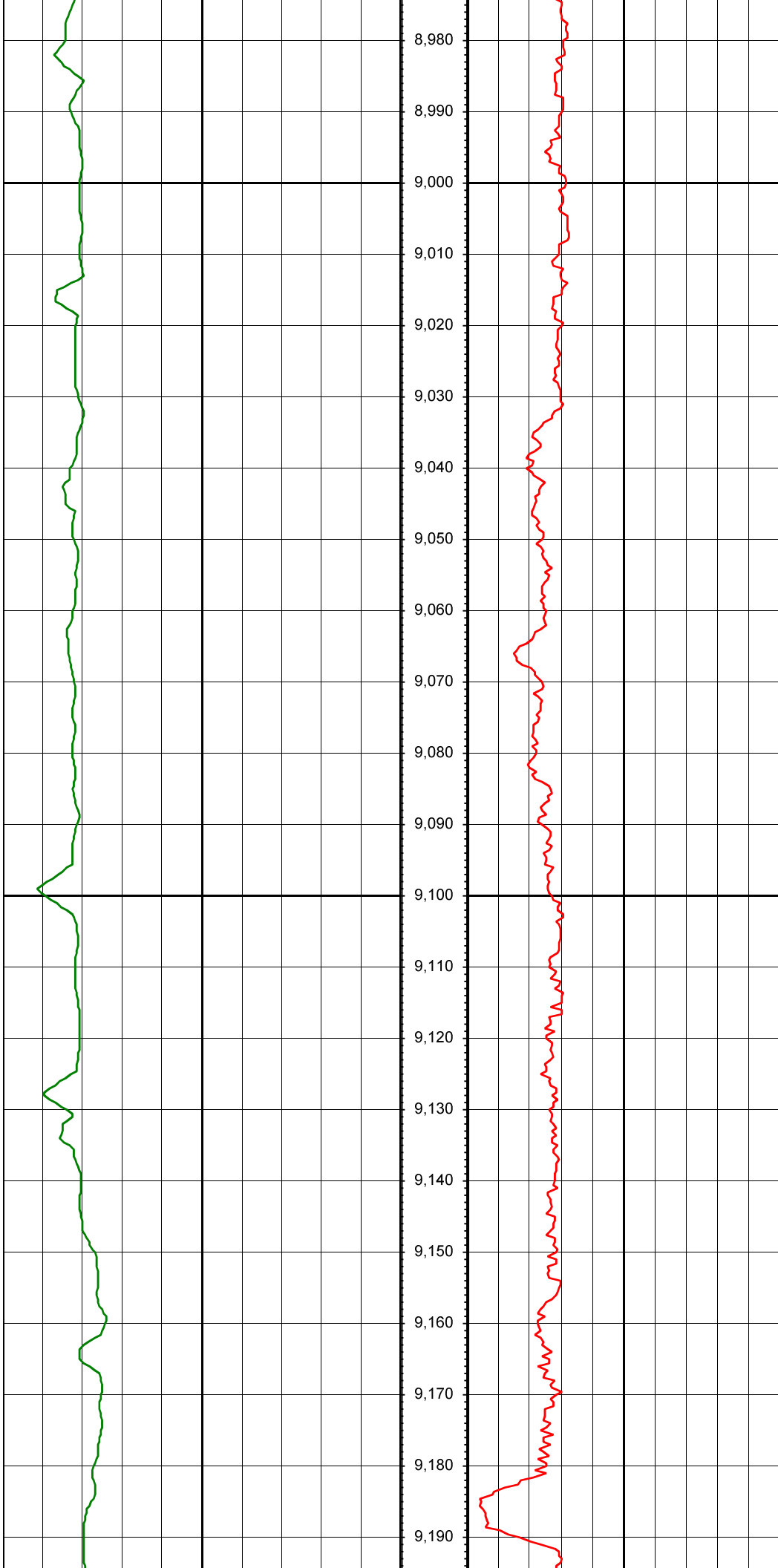
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MD: 8752.00 INC: 91.90 AZ: 0.60



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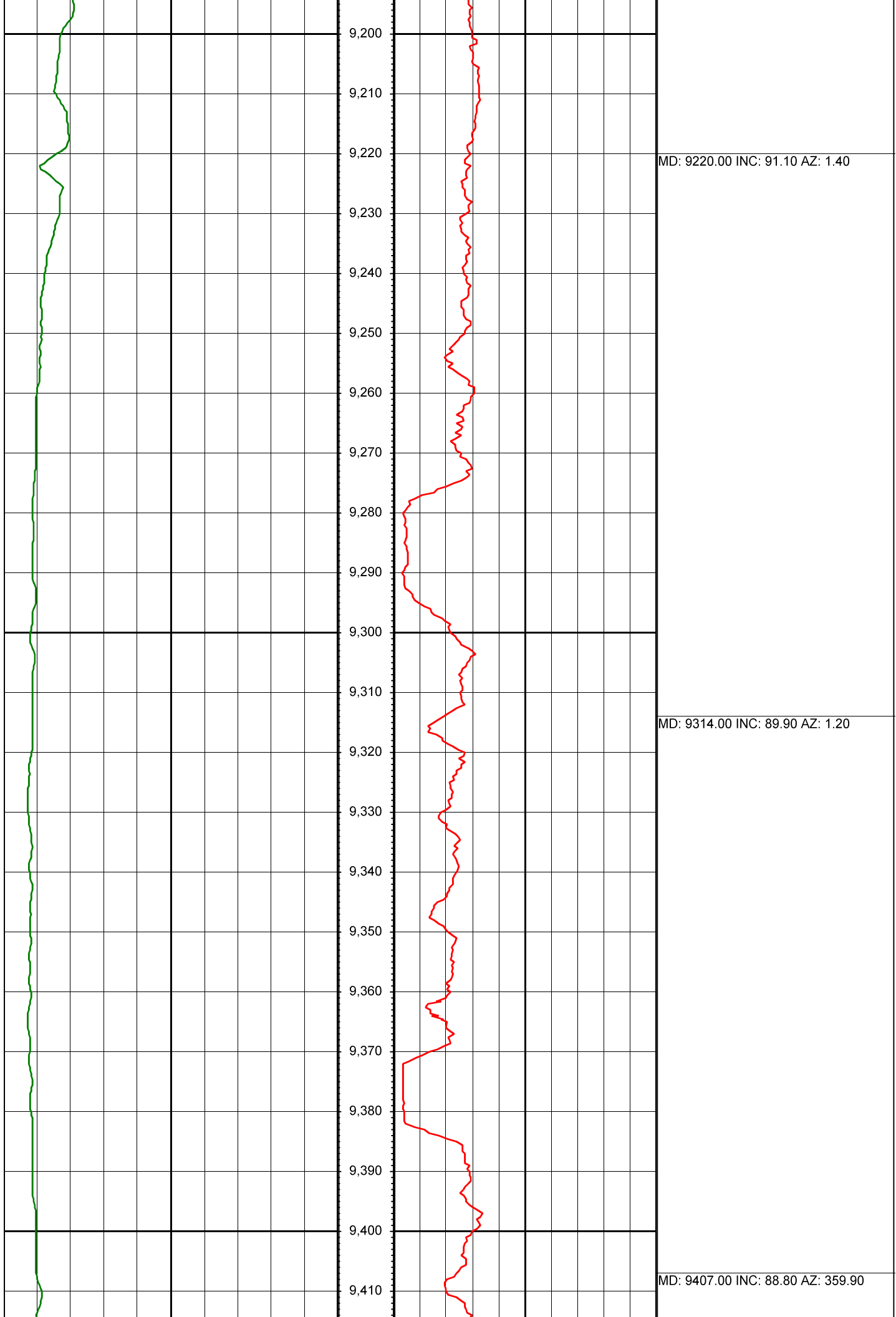
MD: 8940.00 INC: 90.20 AZ: 0.10



MD: 9033.00 INC: 90.20 AZ: 0.00

MD: 9127.00 INC: 91.80 AZ: 1.10







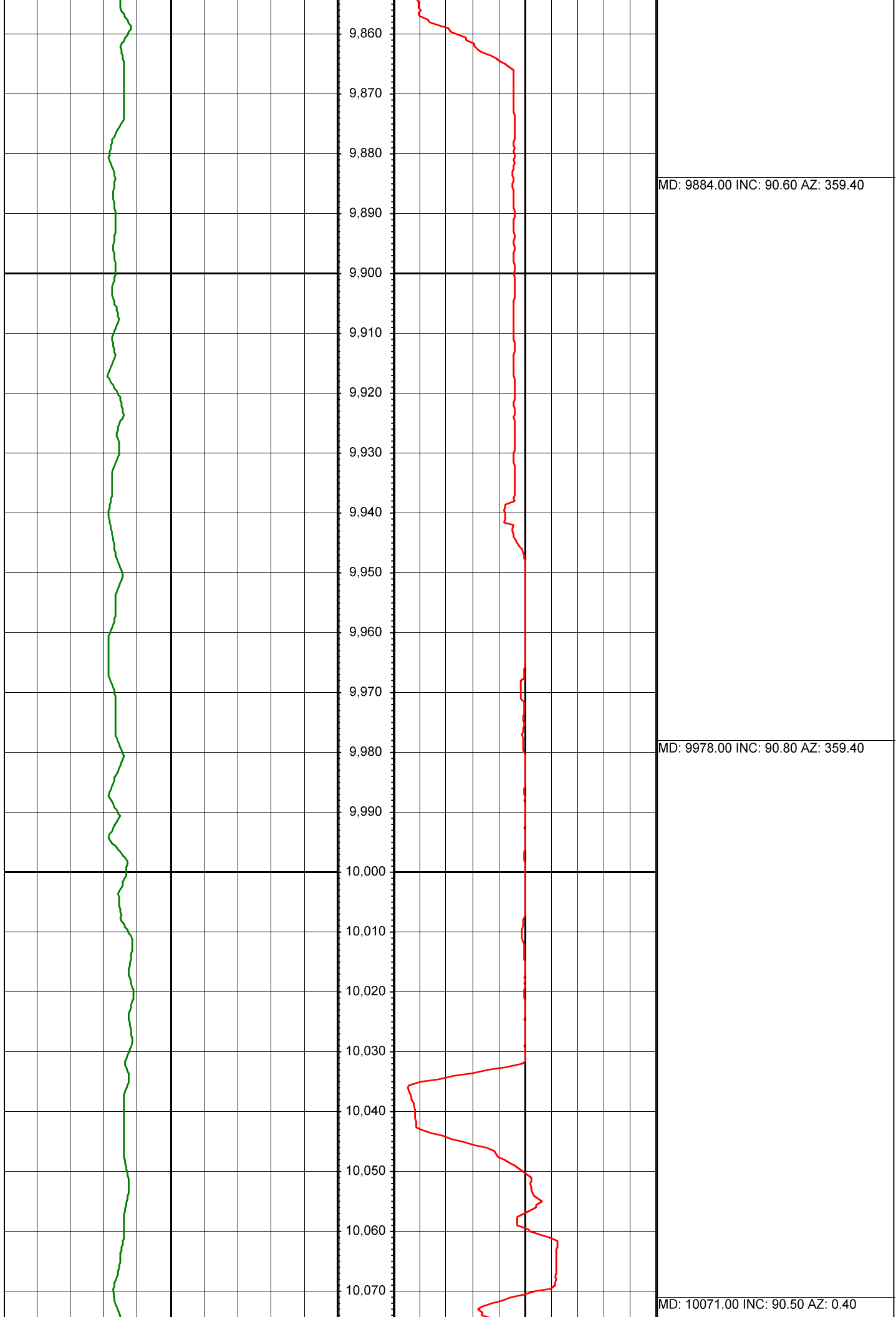
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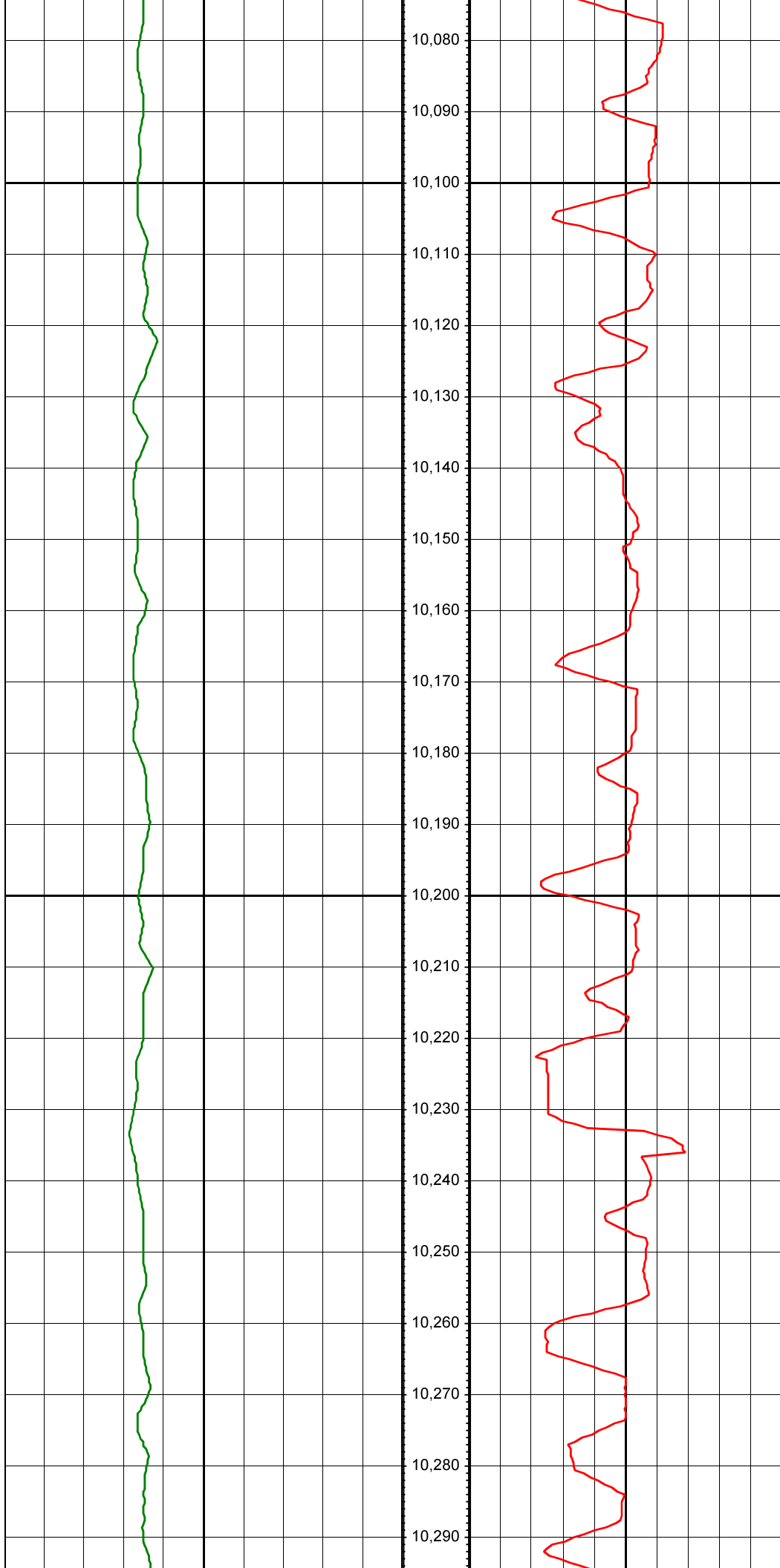
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MD: 9697.00 INC: 87.90 AZ: 359.70

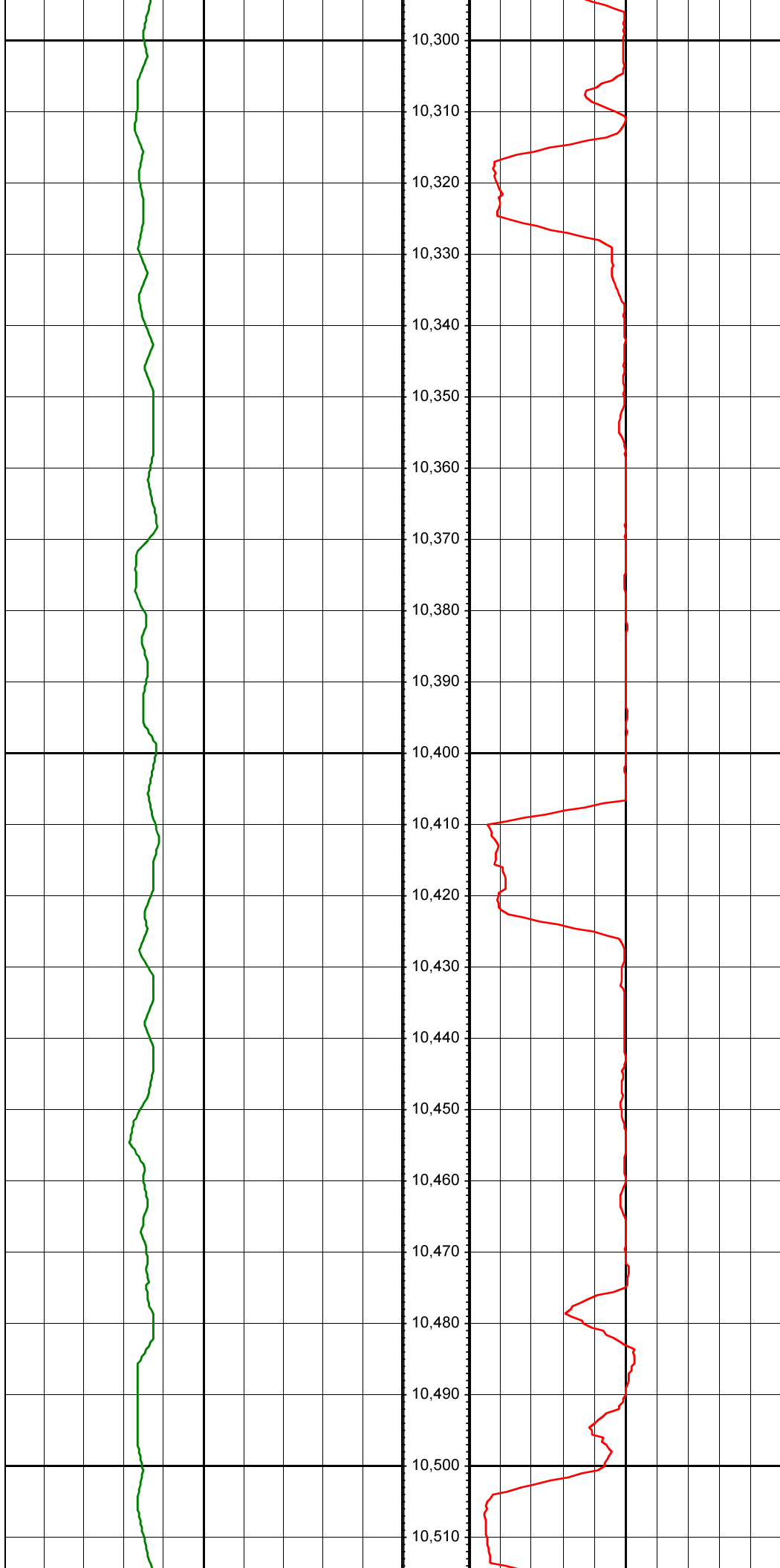
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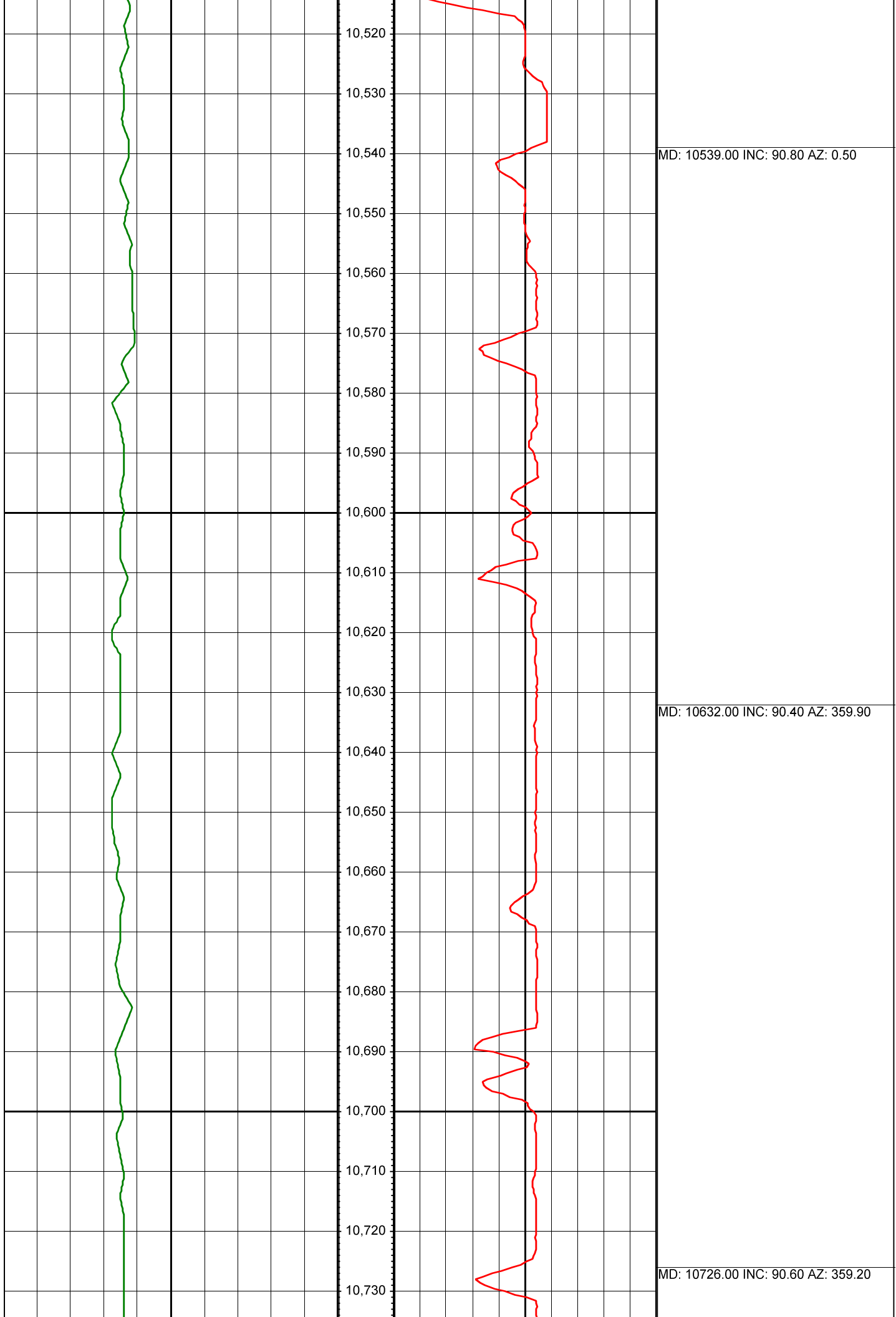
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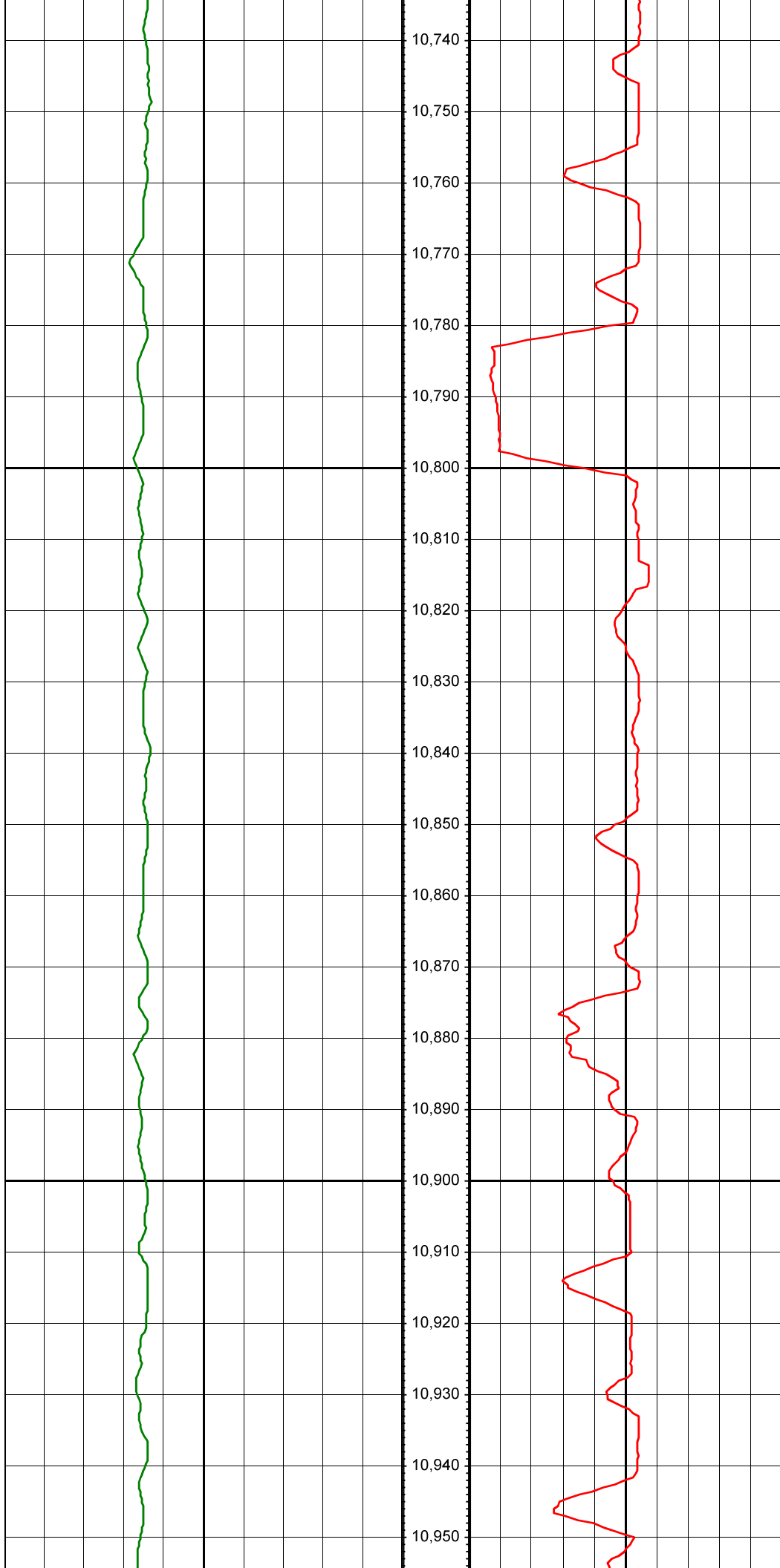
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MD: 10352.00 INC: 90.70 AZ: 359.10

MD: 10445.00 INC: 91.20 AZ: 359.90

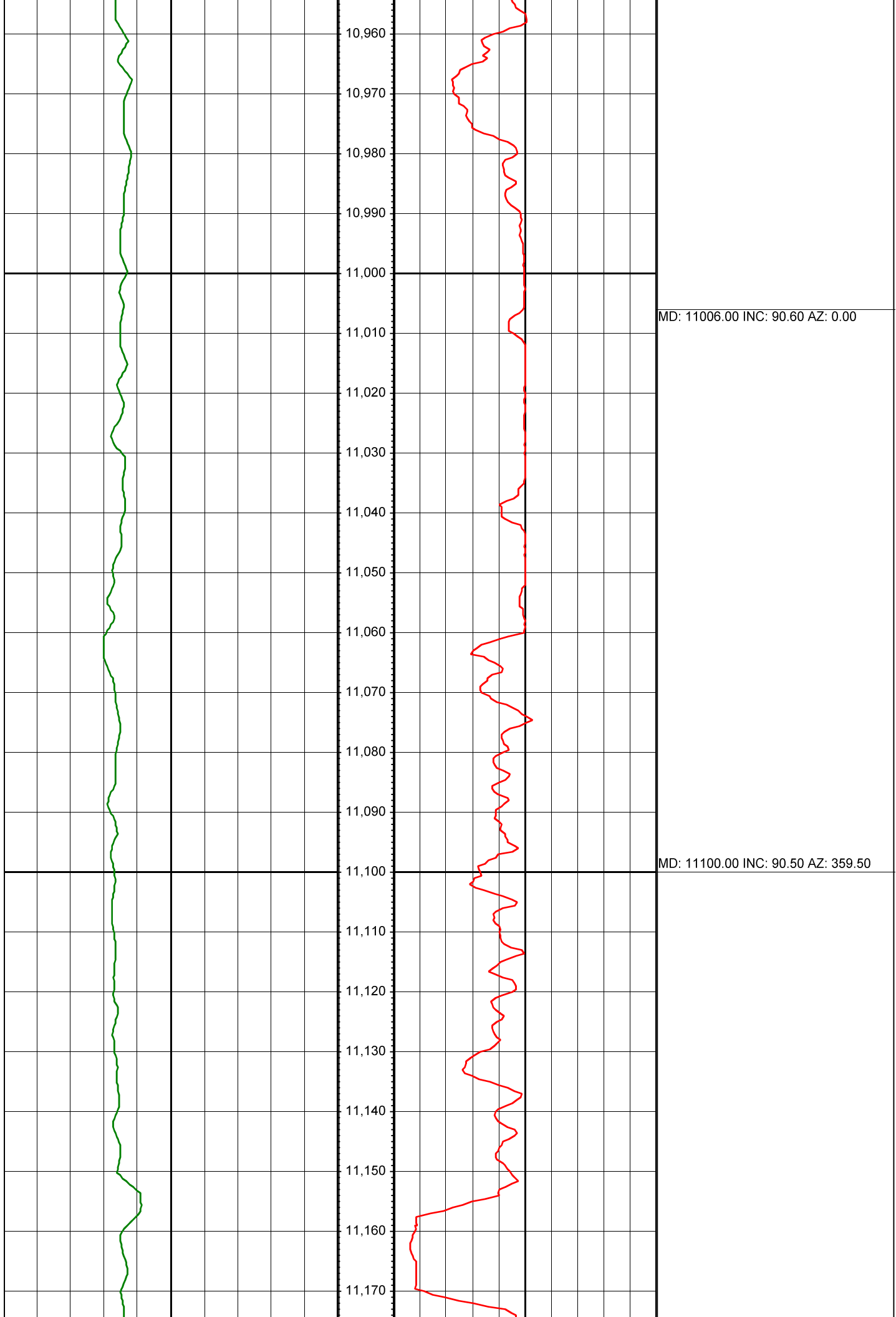


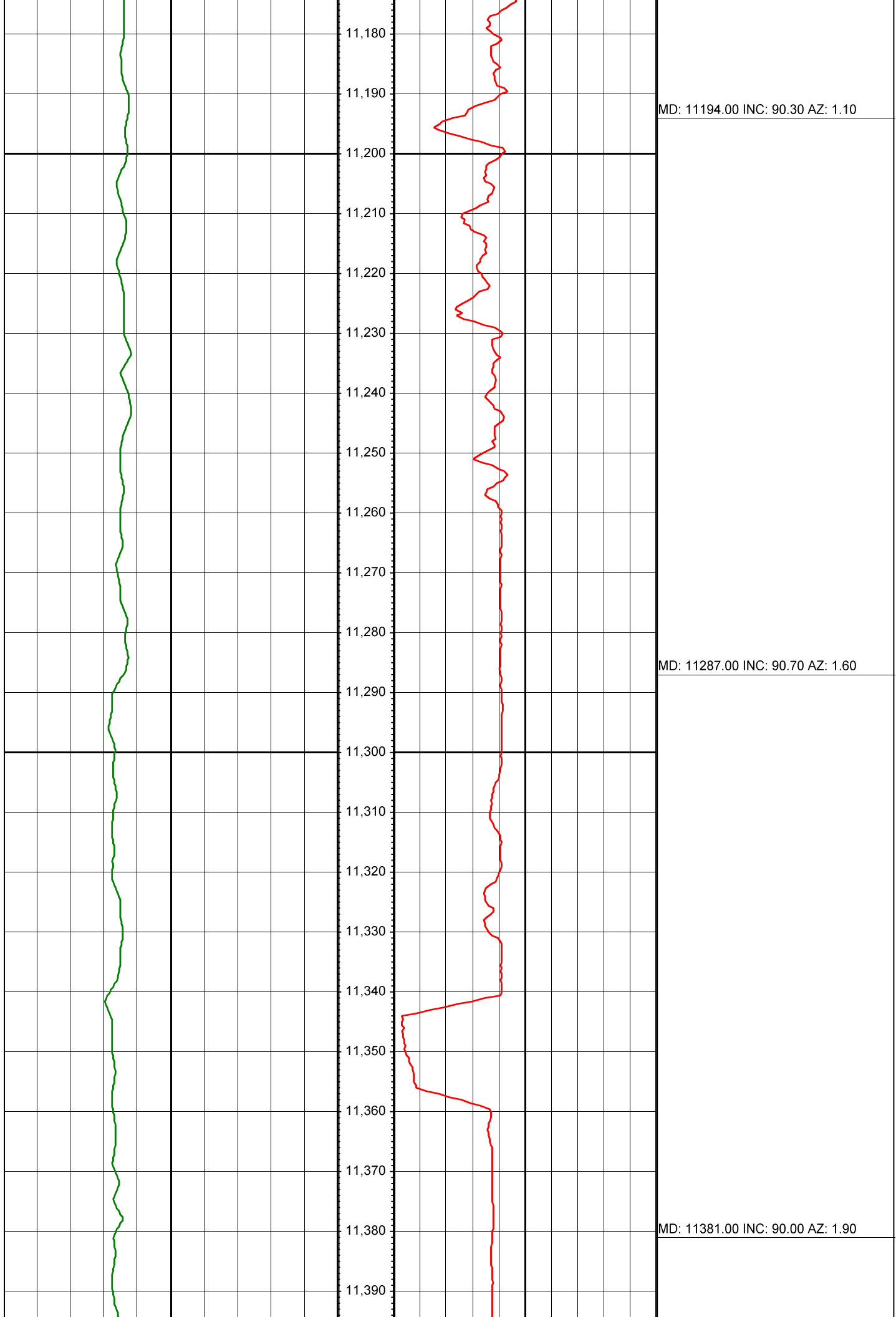


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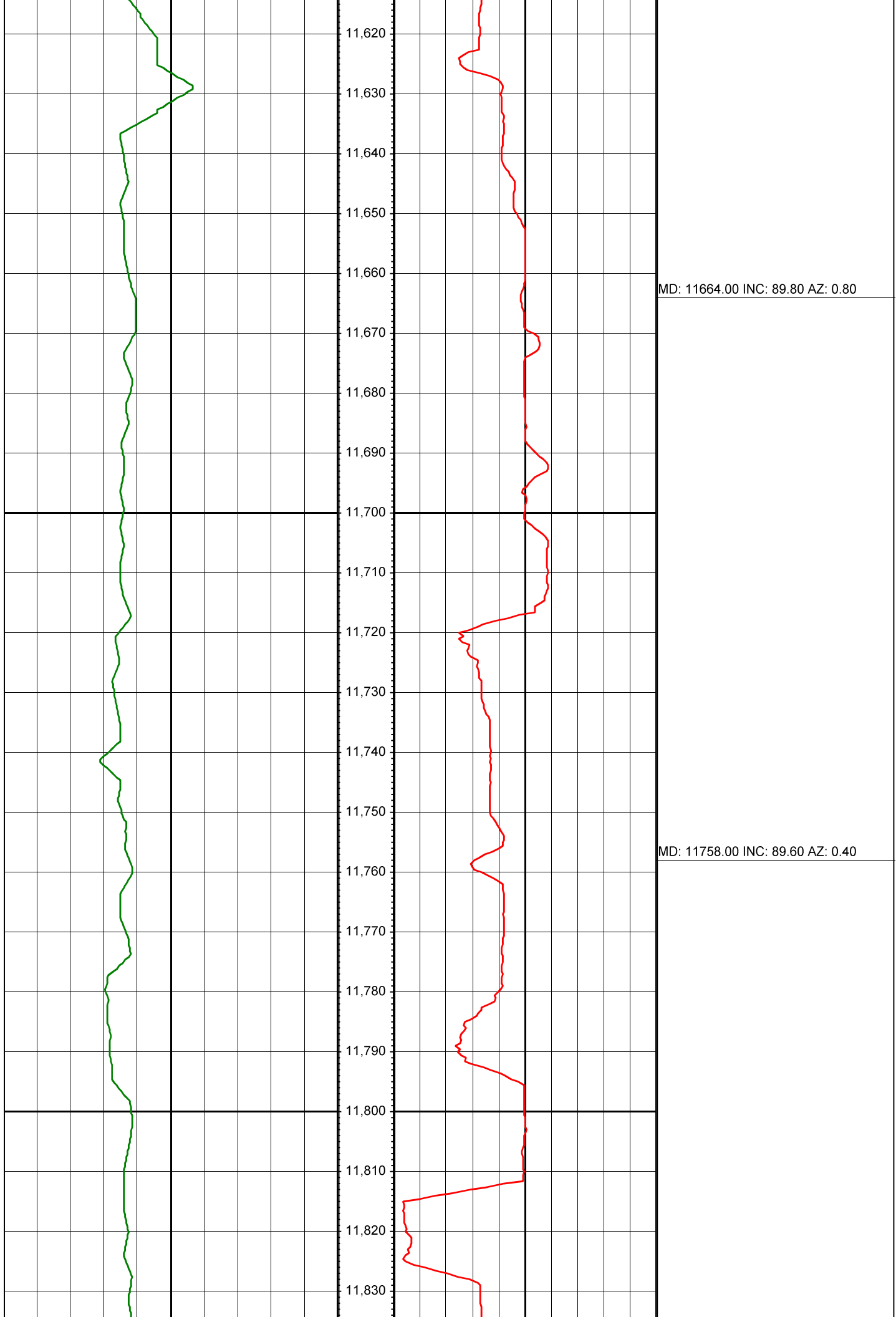


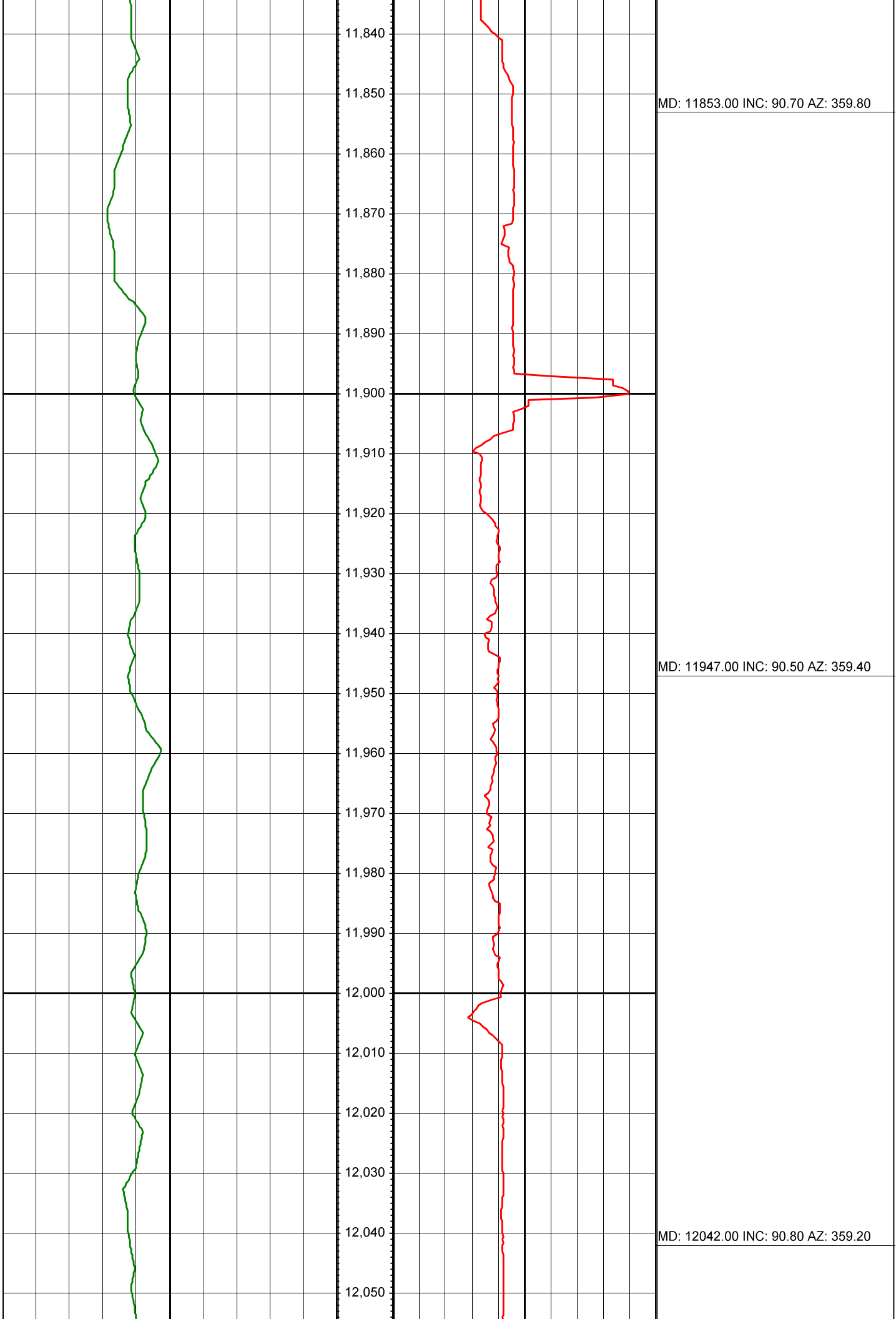


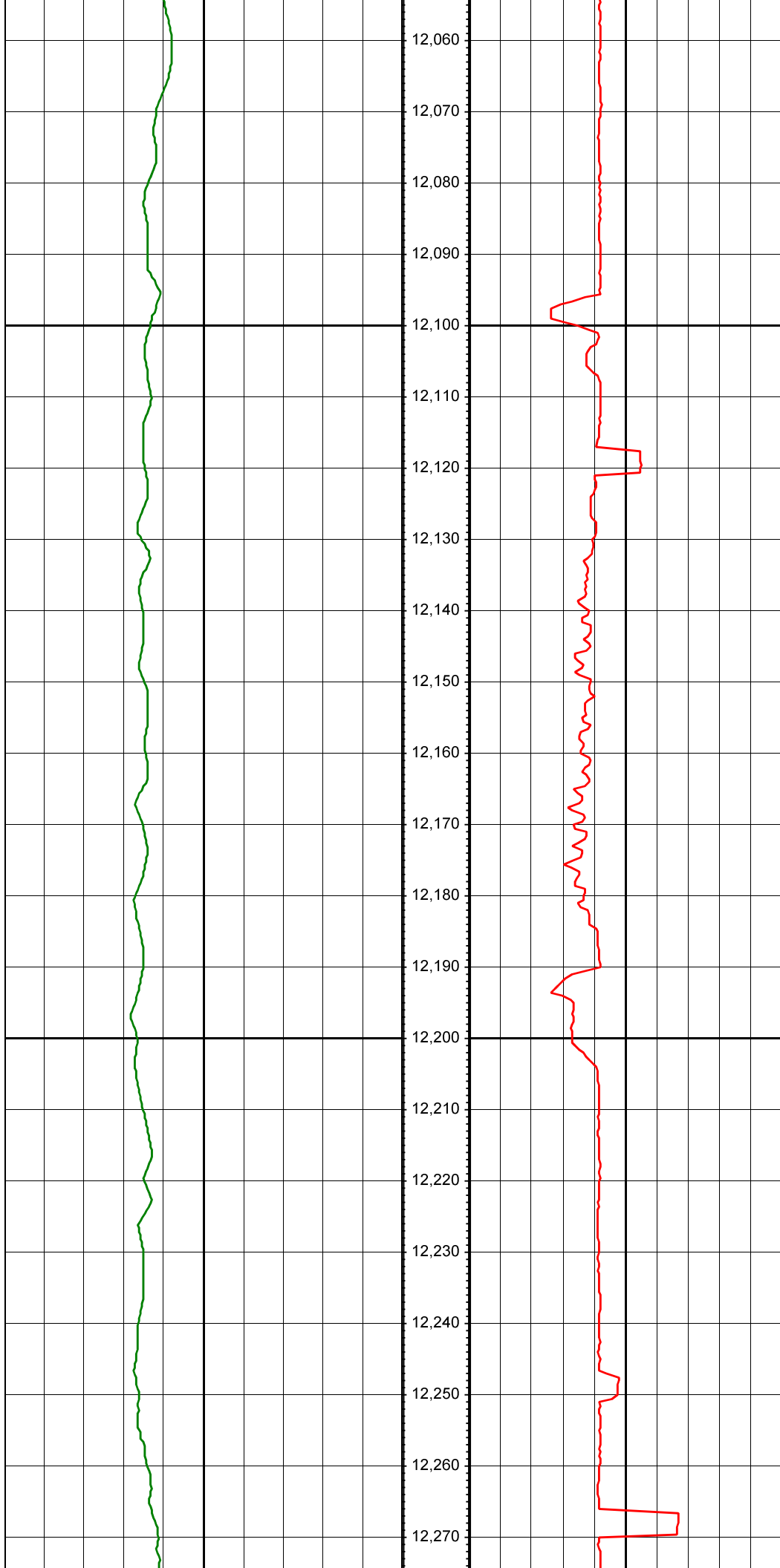


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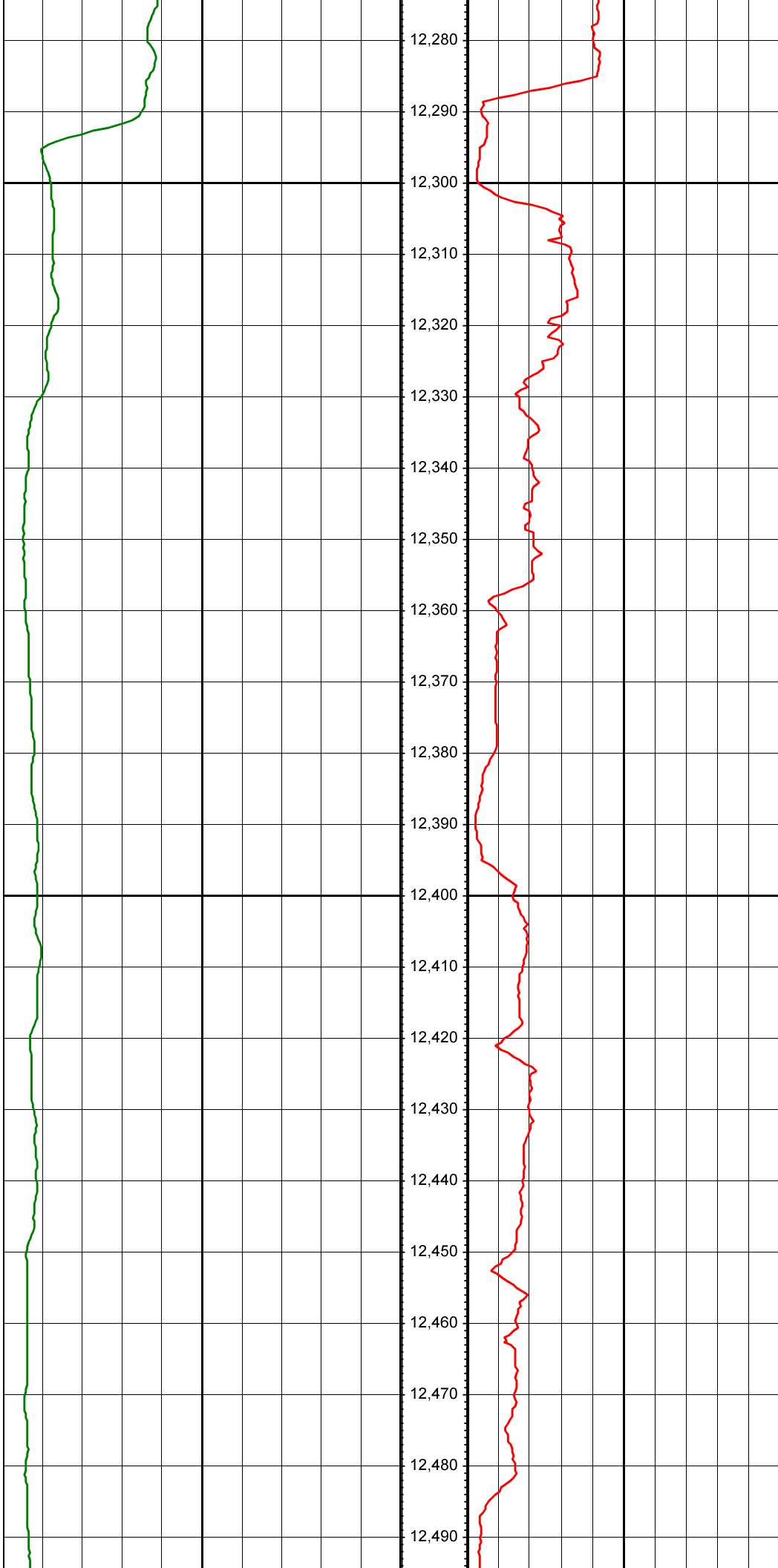






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MD: 12231.00 INC: 90.50 AZ: 357.70



MD: 12325.00 INC: 91.80 AZ: 359.20

MD: 12420.00 INC: 91.50 AZ: 0.60

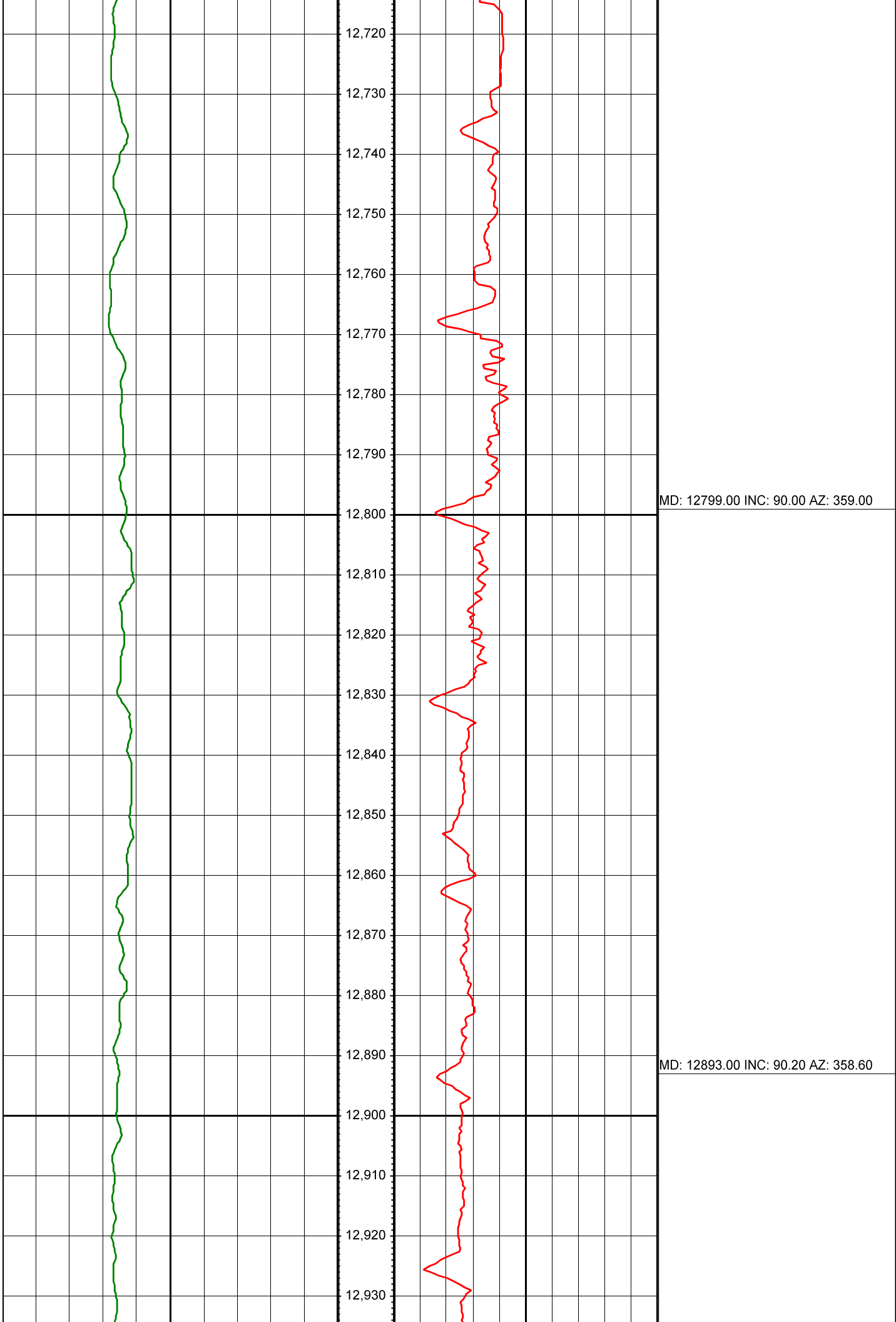


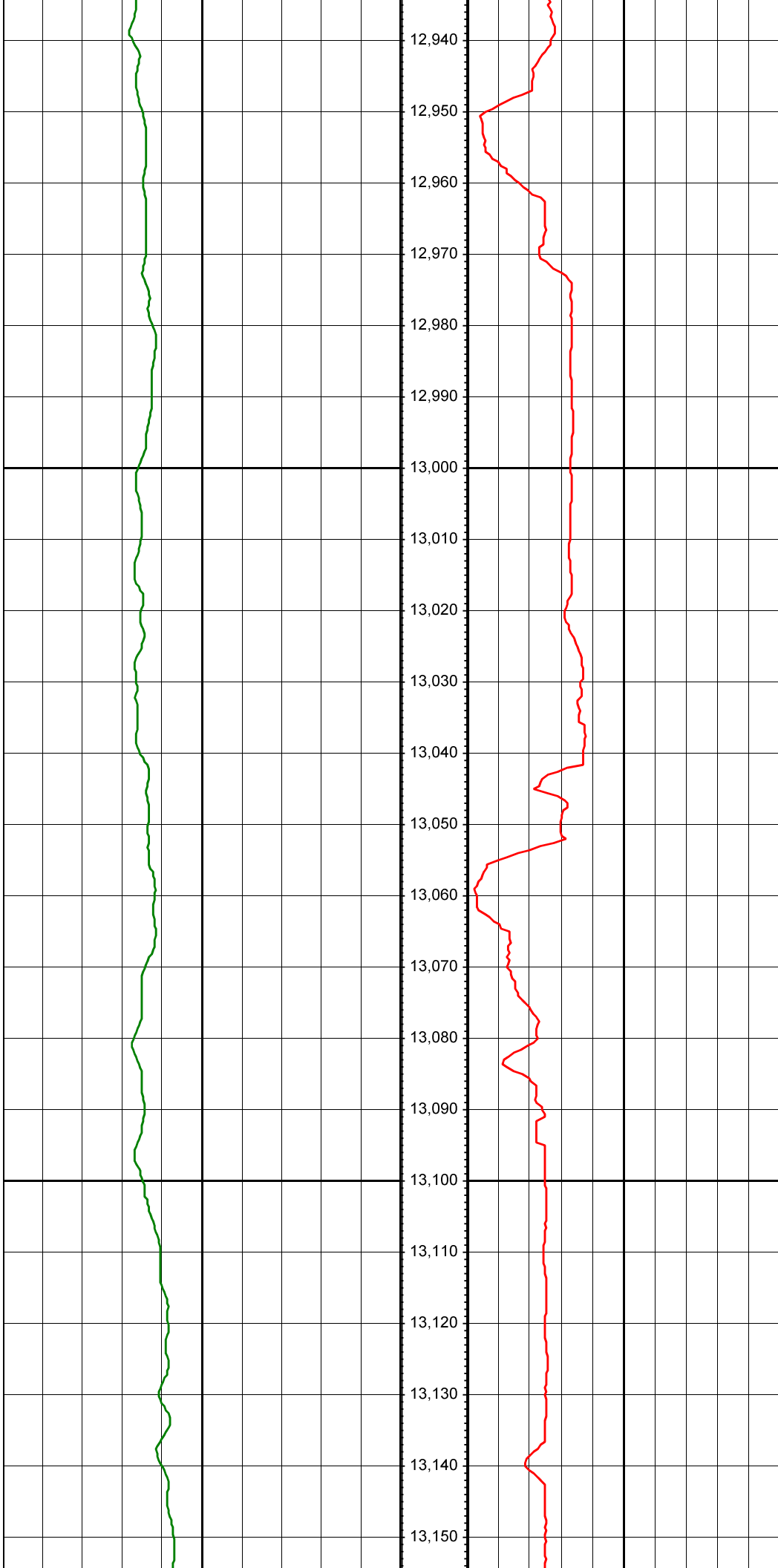
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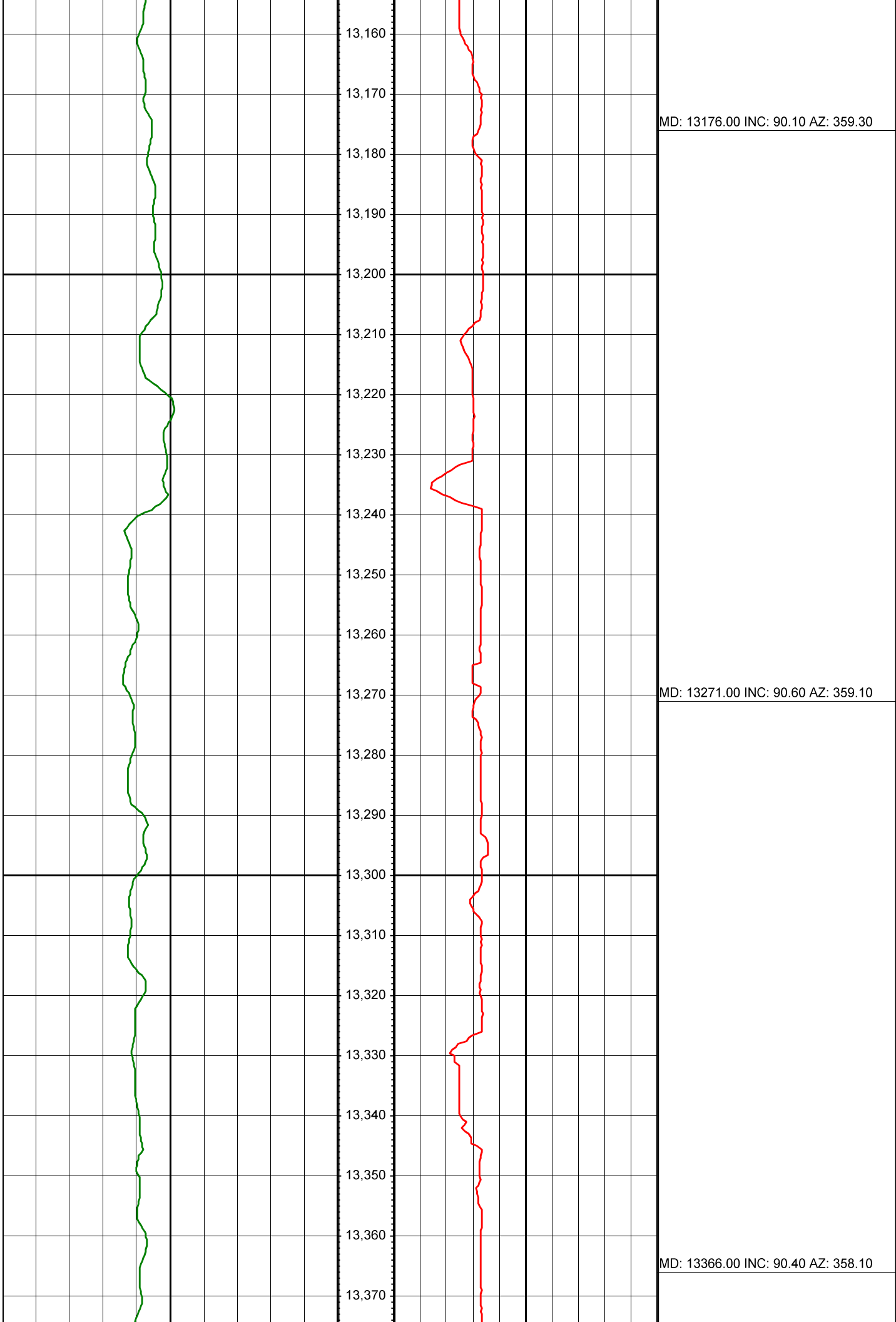


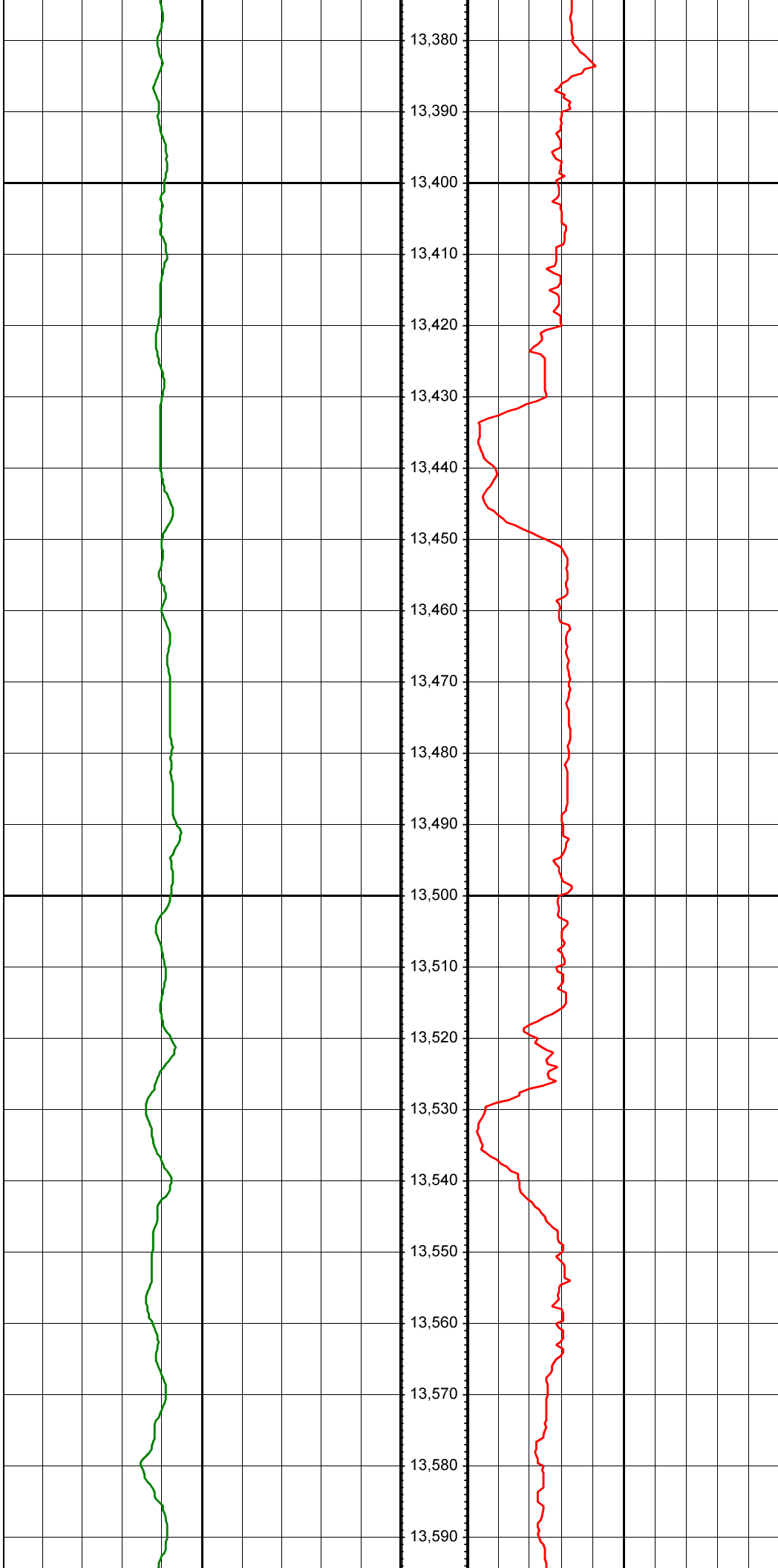




MD: 12987.00 INC: 90.90 AZ: 359.70

MD: 13081.00 INC: 90.20 AZ: 359.90





MD: 13461.00 INC: 91.20 AZ: 359.90

MD: 13556.00 INC: 91.10 AZ: 359.60



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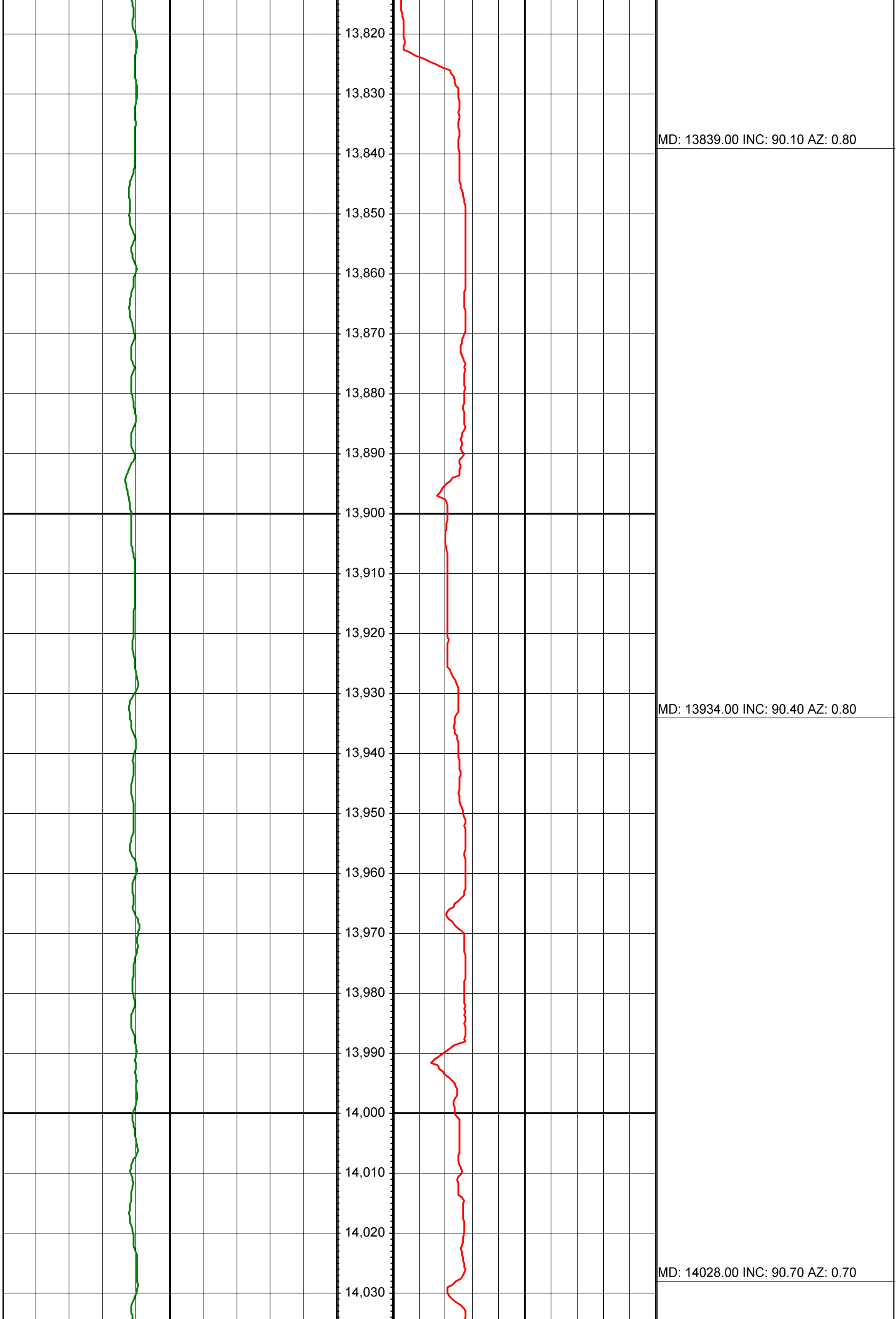
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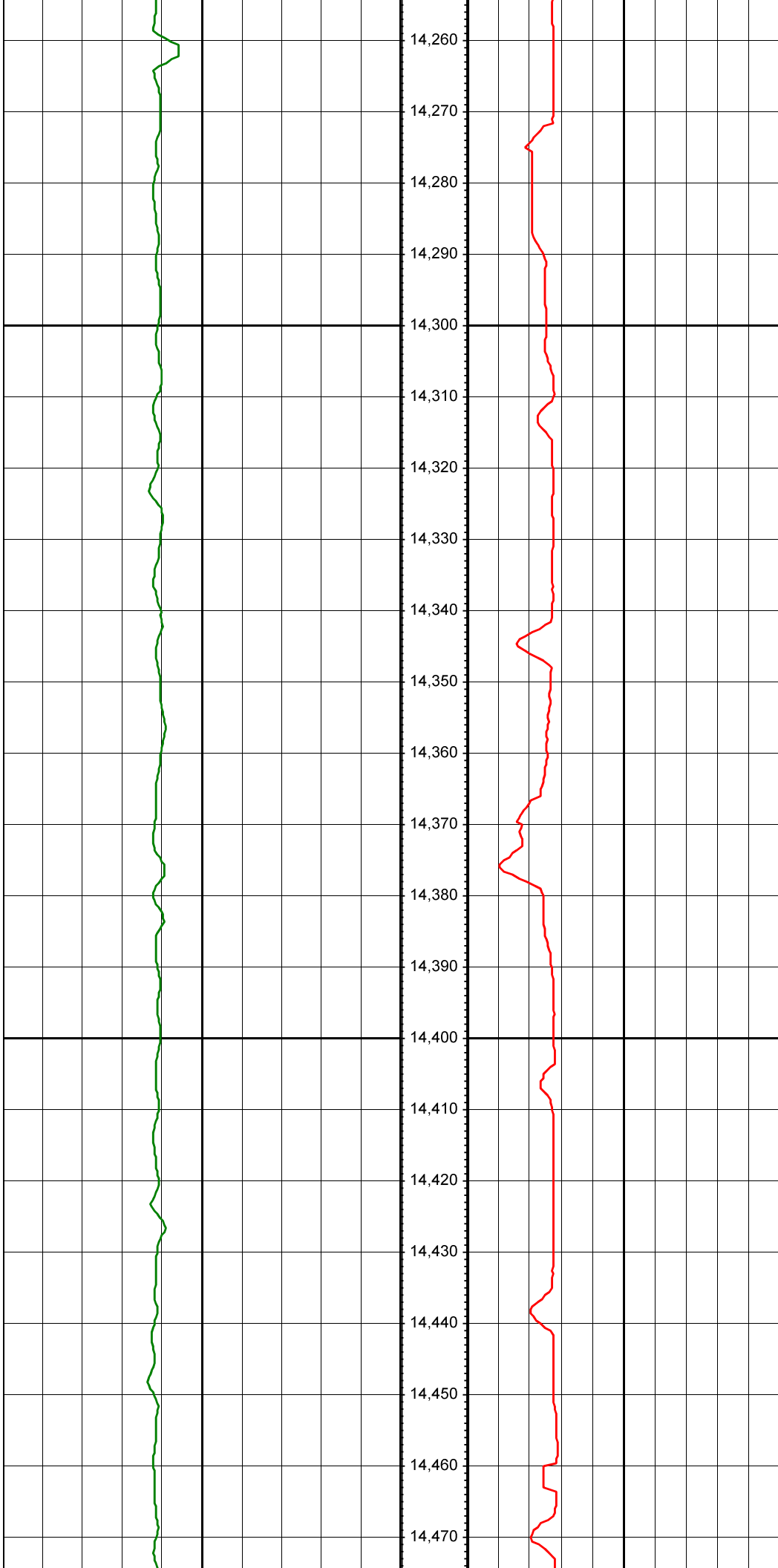
MD: 13745.00 INC: 89.70 AZ: 359.40





MD: 14122.00 INC: 90.90 AZ: 0.40

MD: 14217.00 INC: 90.00 AZ: 1.10



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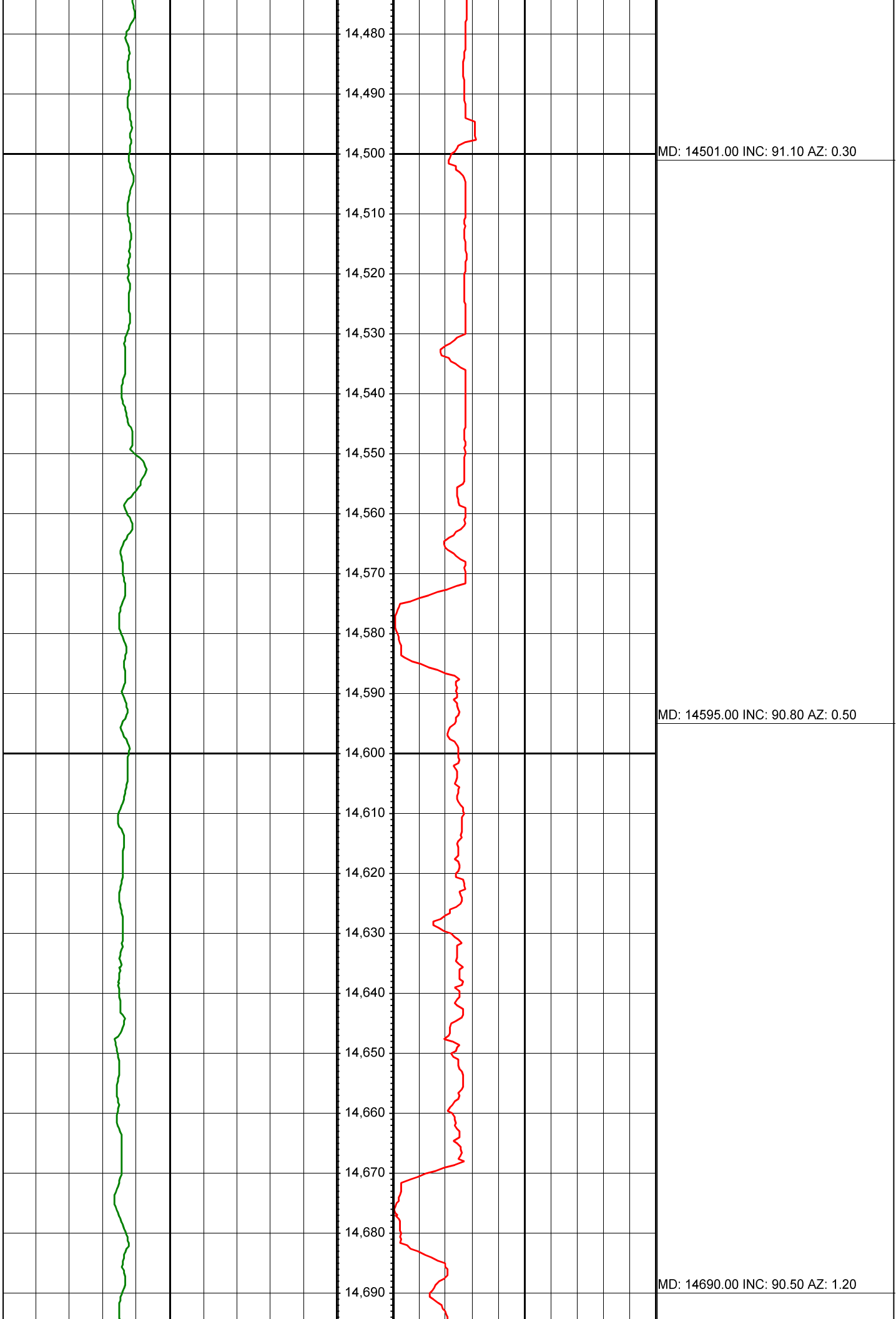
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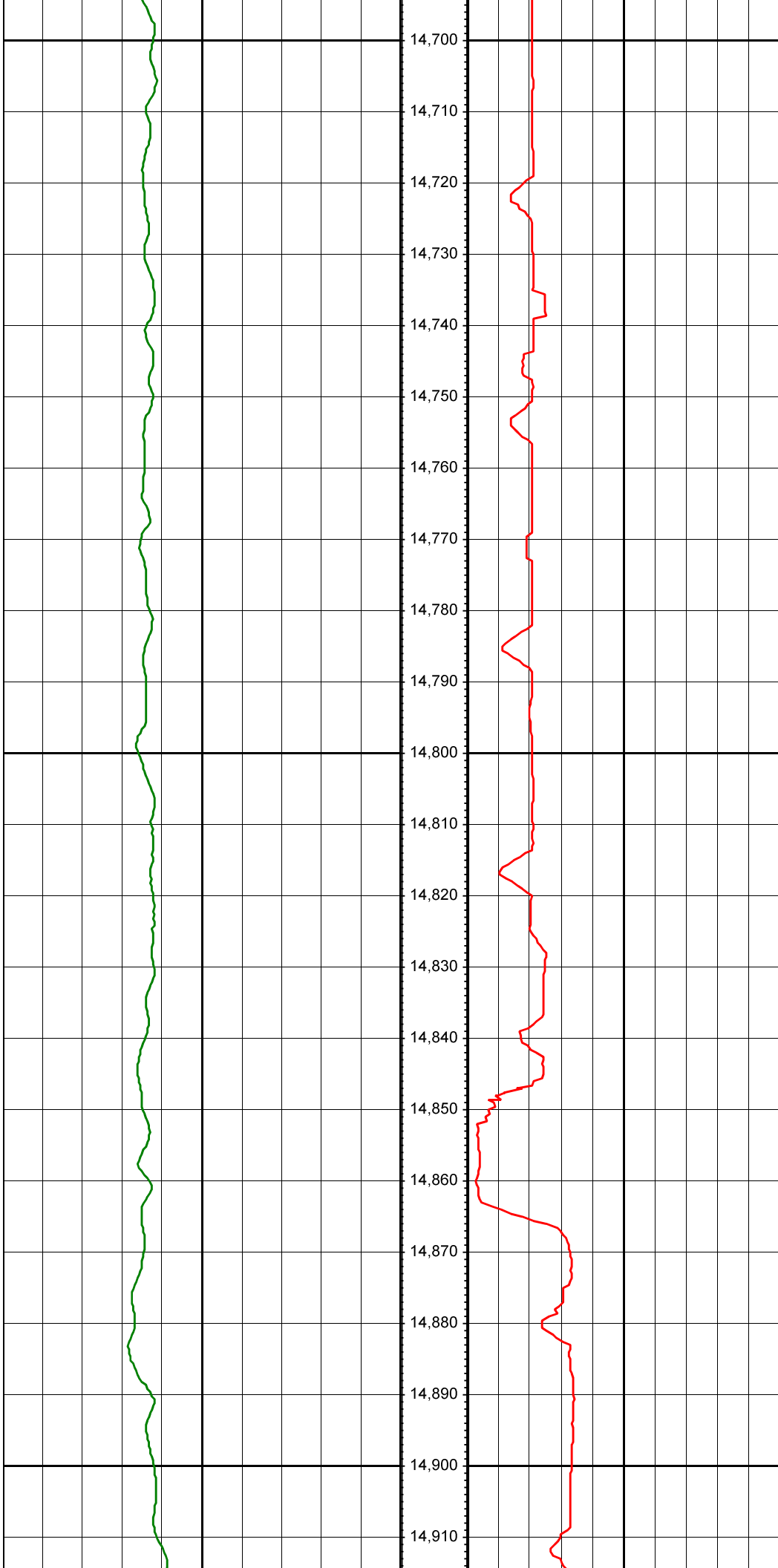
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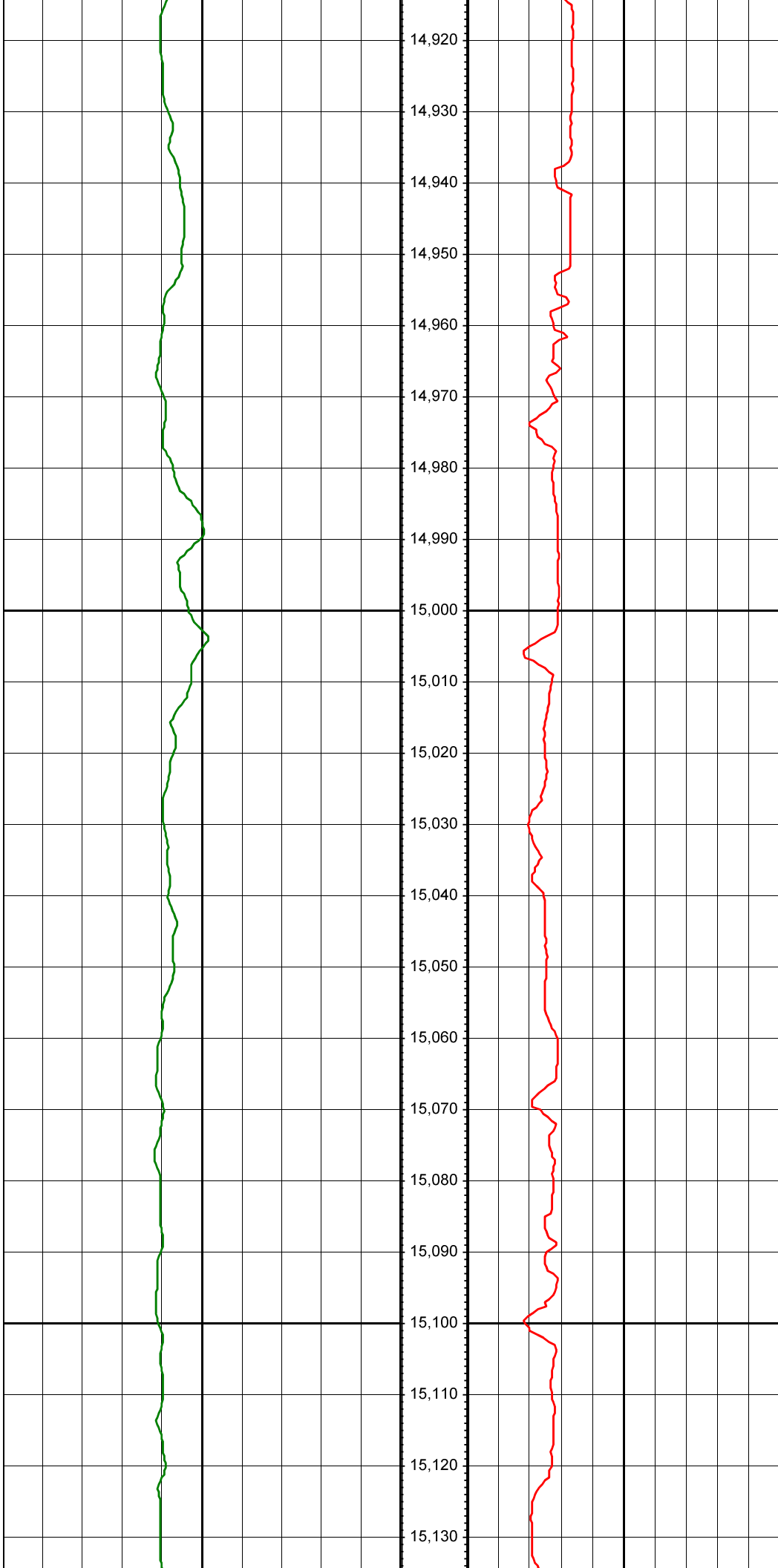






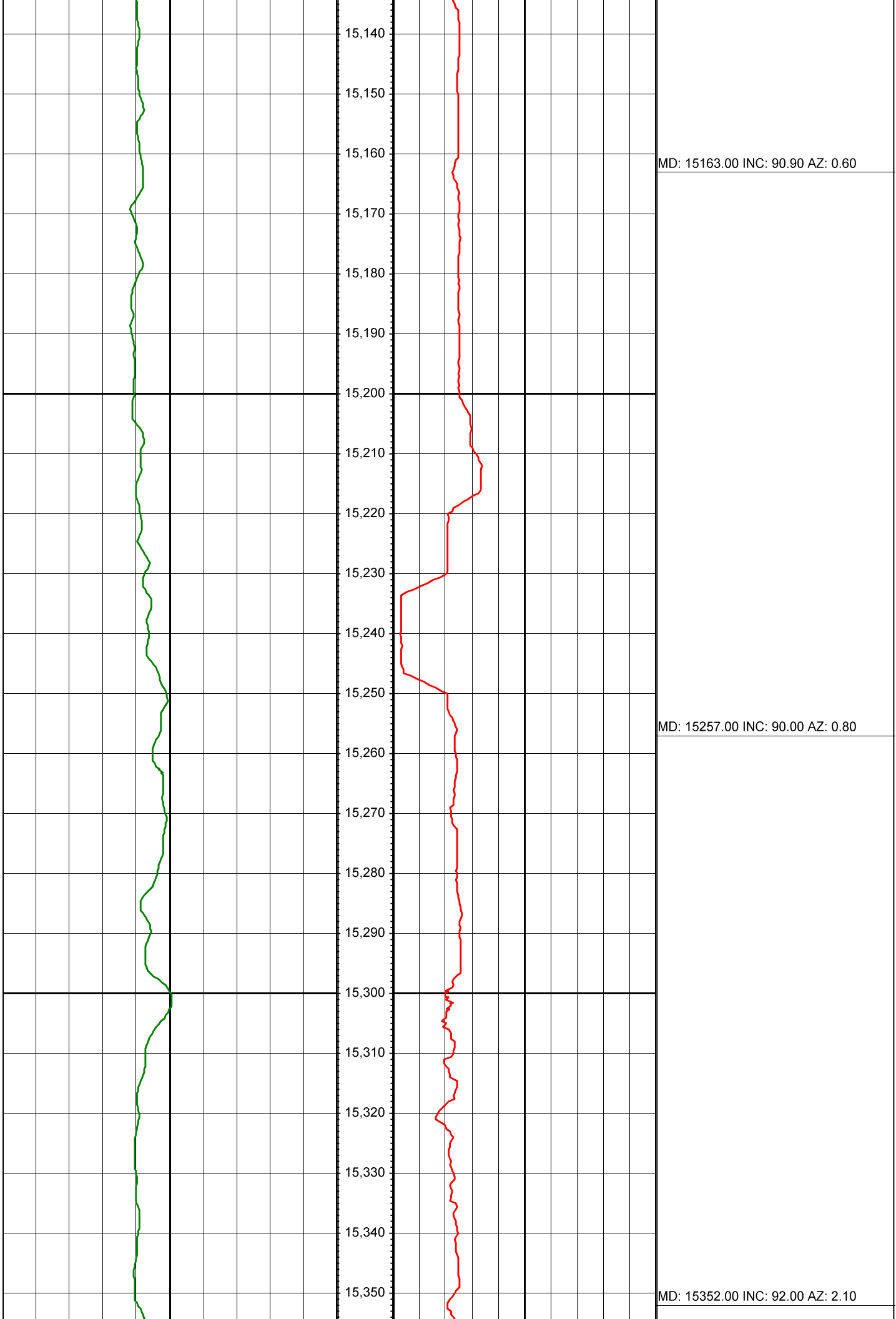
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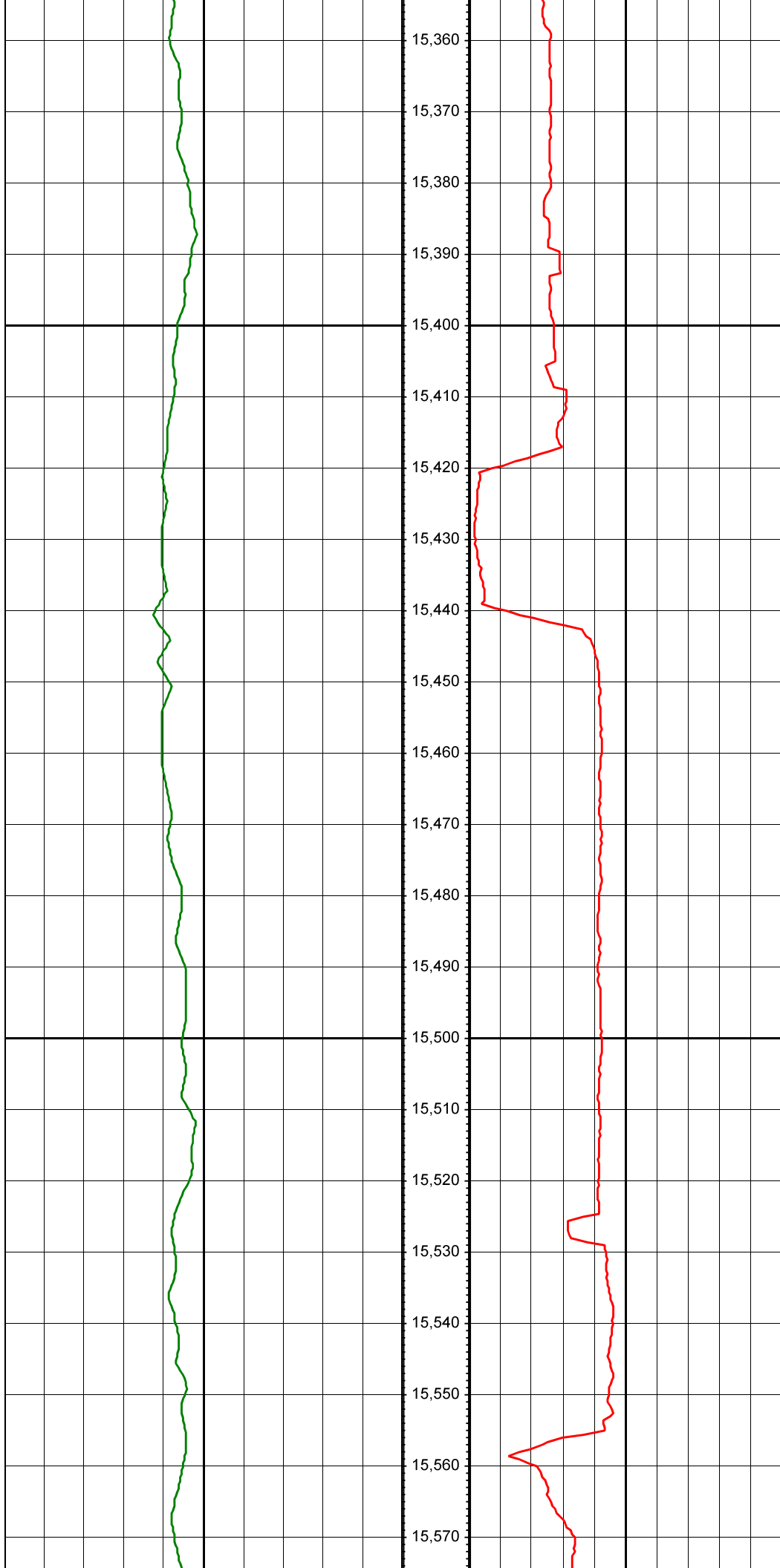
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MD: 15446.00 INC: 89.90 AZ: 1.30

MD: 15540.00 INC: 90.20 AZ: 1.00



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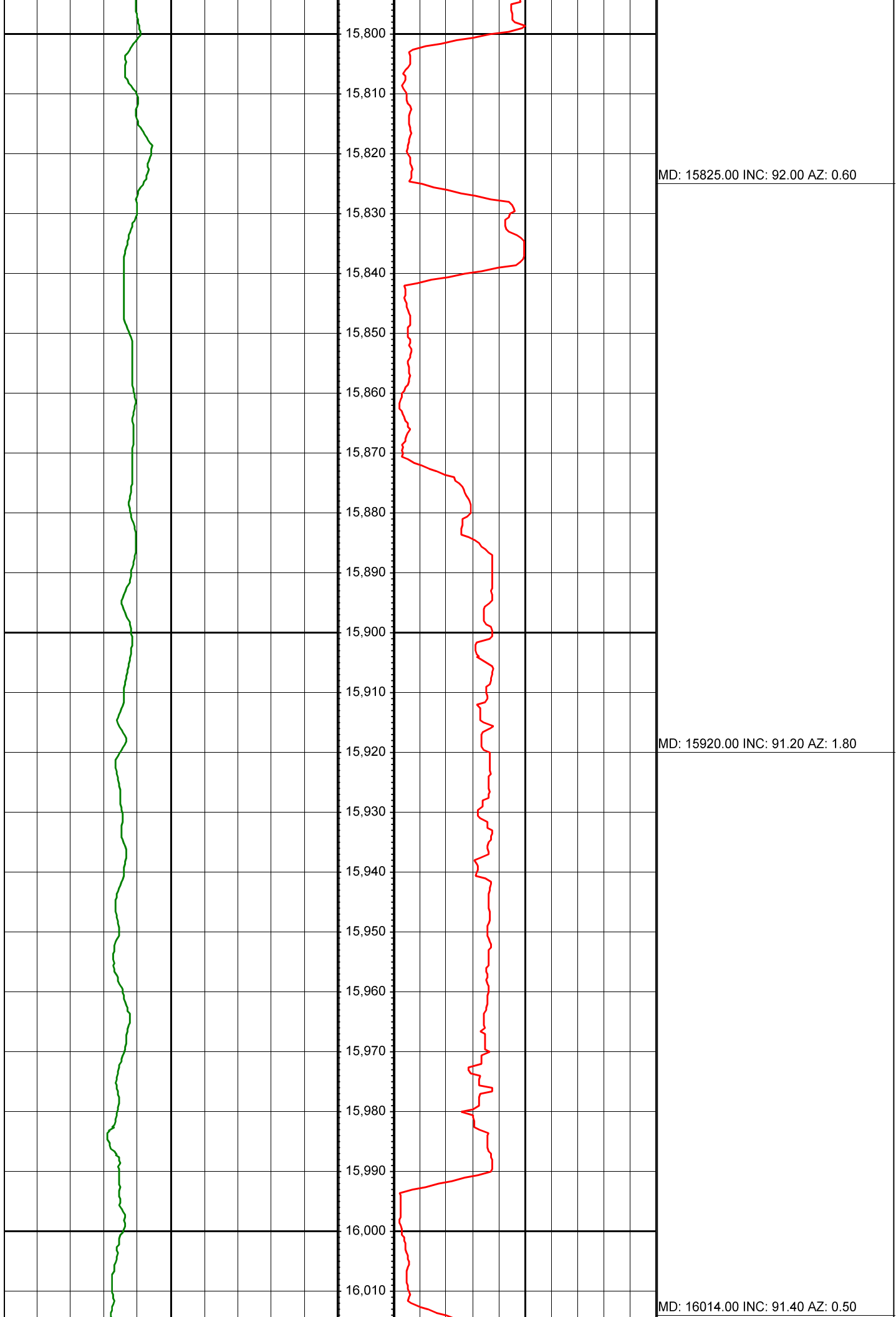
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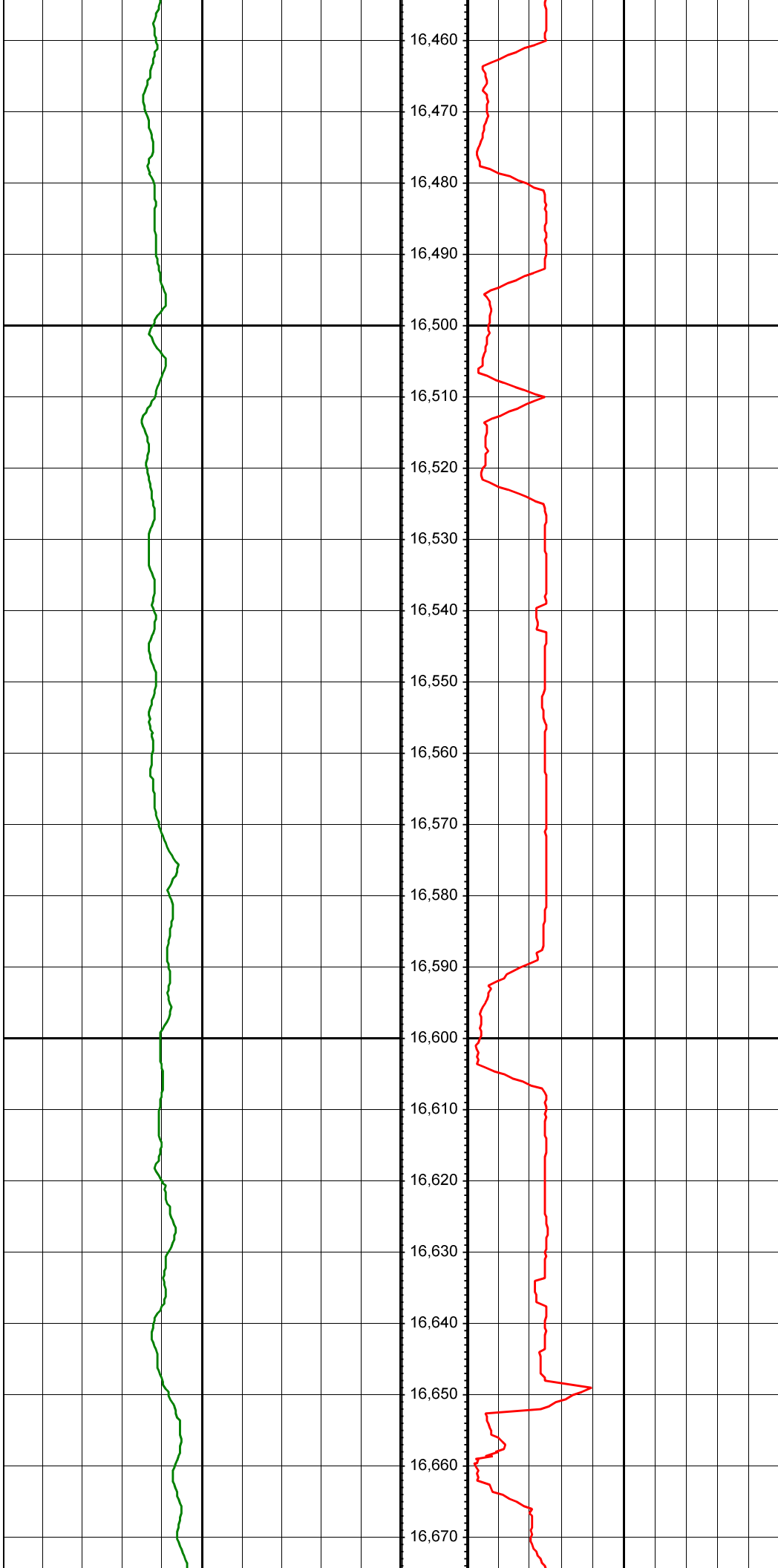
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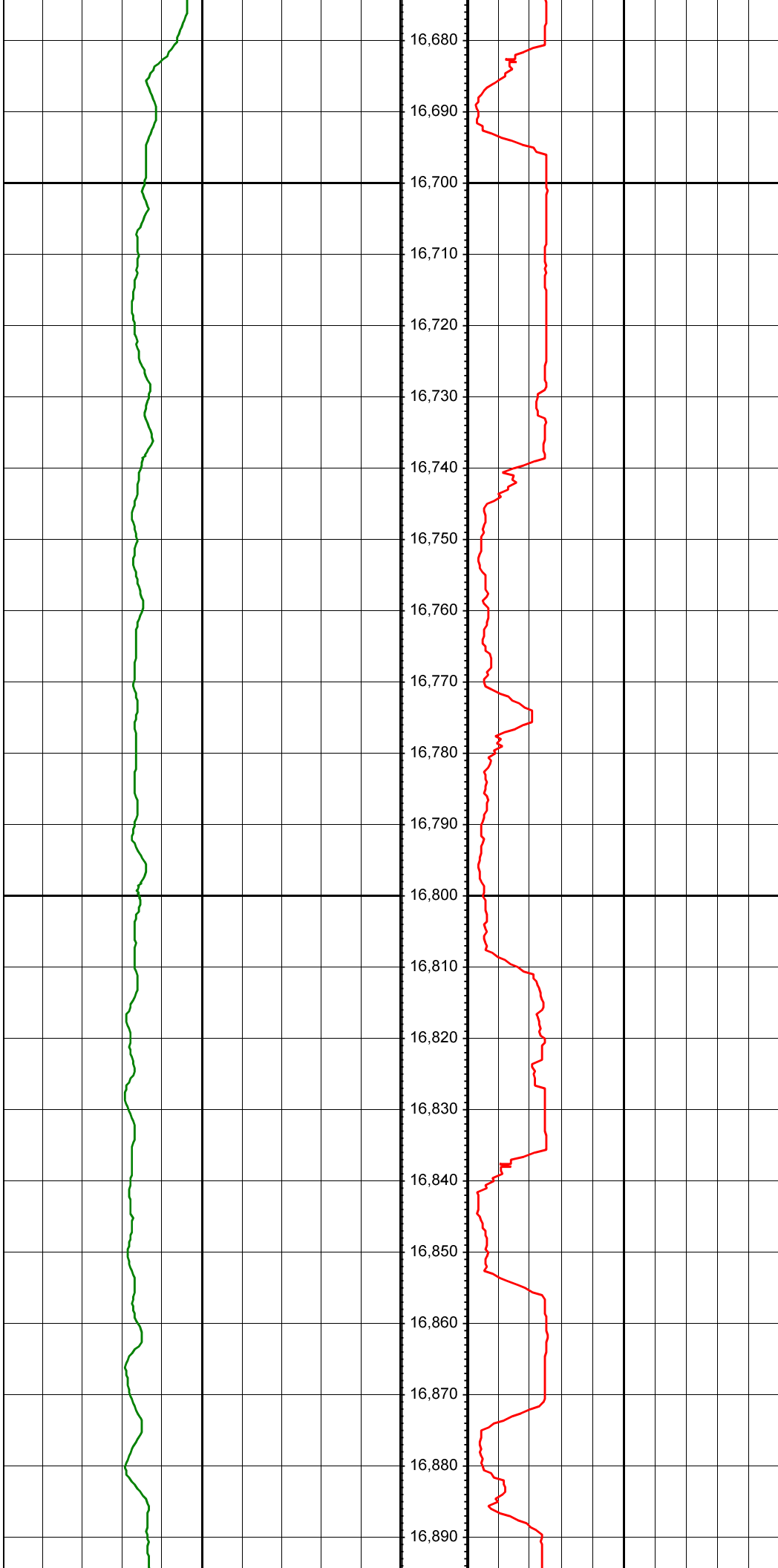
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MD: 16864.00 INC: 88.40 AZ: 358.80

