



Cathedral Energy Services
1949 North Pyrite Road
Casper, Wyoming 82604

135550

5":100' - MD

5/16/2014 2:17:38 PM

CATHEDRAL

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

Country: U.S.A.

State / Province: Colorado

County / Parish: Weld

Started: 11/17/2013 06:00 AM

API/UWI: 05-123-37514-0000

Field: Wattenberg (Codell)

Well: State 3C-16H-M-368

Rig: Helmerich & Payne, Inc. 278

Ended: 11/24/2013 06:00 PM

Gamma Ray
Section Plane: 90.00
Magnetic North: 8.66
Gamma Attenuation Factor: 2.46
Gamma Averaging: 7%

Personnel

Day Hand: A. Bertagnole

Night Hand: B. Stahlecker

Comp. Emp: Charlie Parker

Maximum Temperature: 206°F

Location

Latitude: 40.222200

Longitude: -105.016320

Elev. GL: 5059

Elev. DF:

Elev. KB: 5084

Log and Survey Depth Relative to Kelly Busking (KB) Depth

Hole Data

Size	From	To
12.-1/4	0	874
8-3/4	874	7619
6-1/8	7619	11794

Casing Data

Size	From	To
9-5/8	0	874
7	0	7619
4-1/2	0	11794

Bit Sizes

Size	From	To
12-1/4	0	874
8-3/4	874	7619
6-1/8	7619	11794

Mud Data

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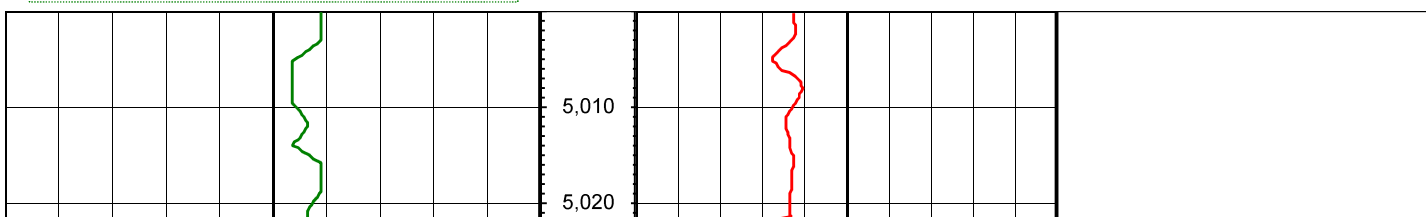
Tool Run Data

Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
249	42.44	0	11/17/2013 5:04:48 PM	5000	11/20/2013 5:04:48 PM	7619
281	38.37	0	11/21/2013 5:06:17 PM	7619	11/24/2013 6:06:17 PM	11794

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)

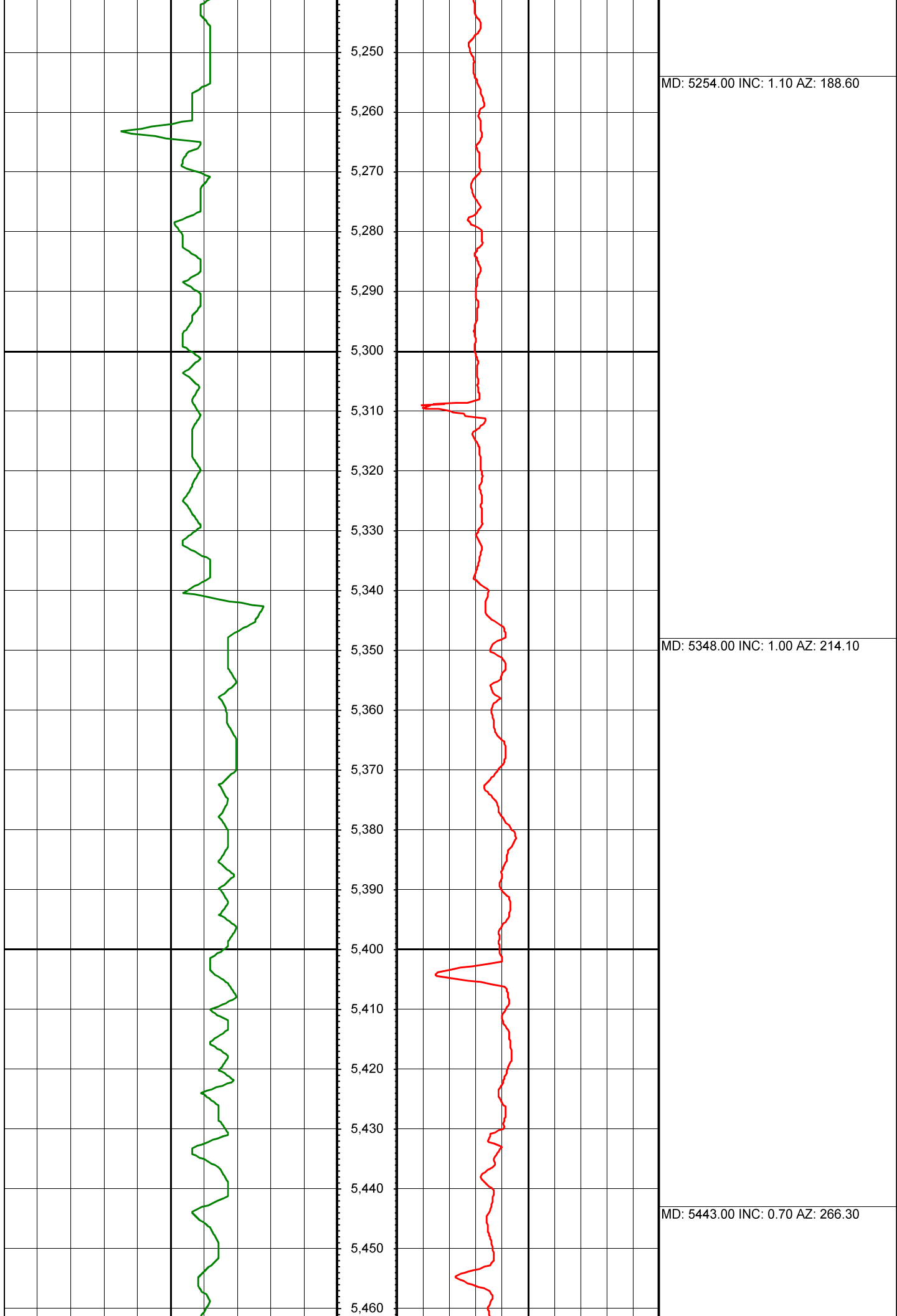
150.00 2 300.00 FT





MD: 5064.00 INC: 0.80 AZ: 158.70

MD: 5159.00 INC: 1.00 AZ: 174.20





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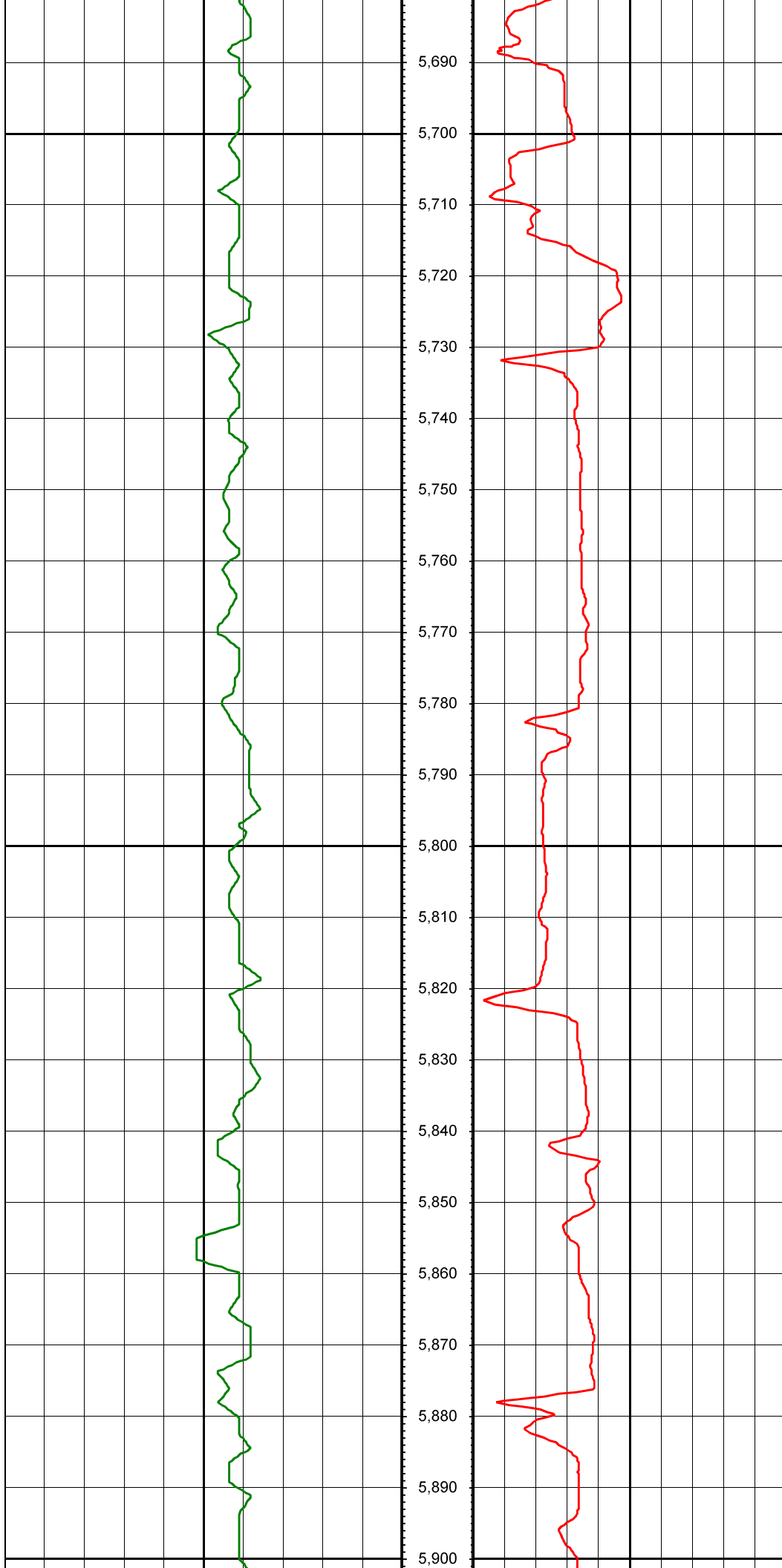
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5,670

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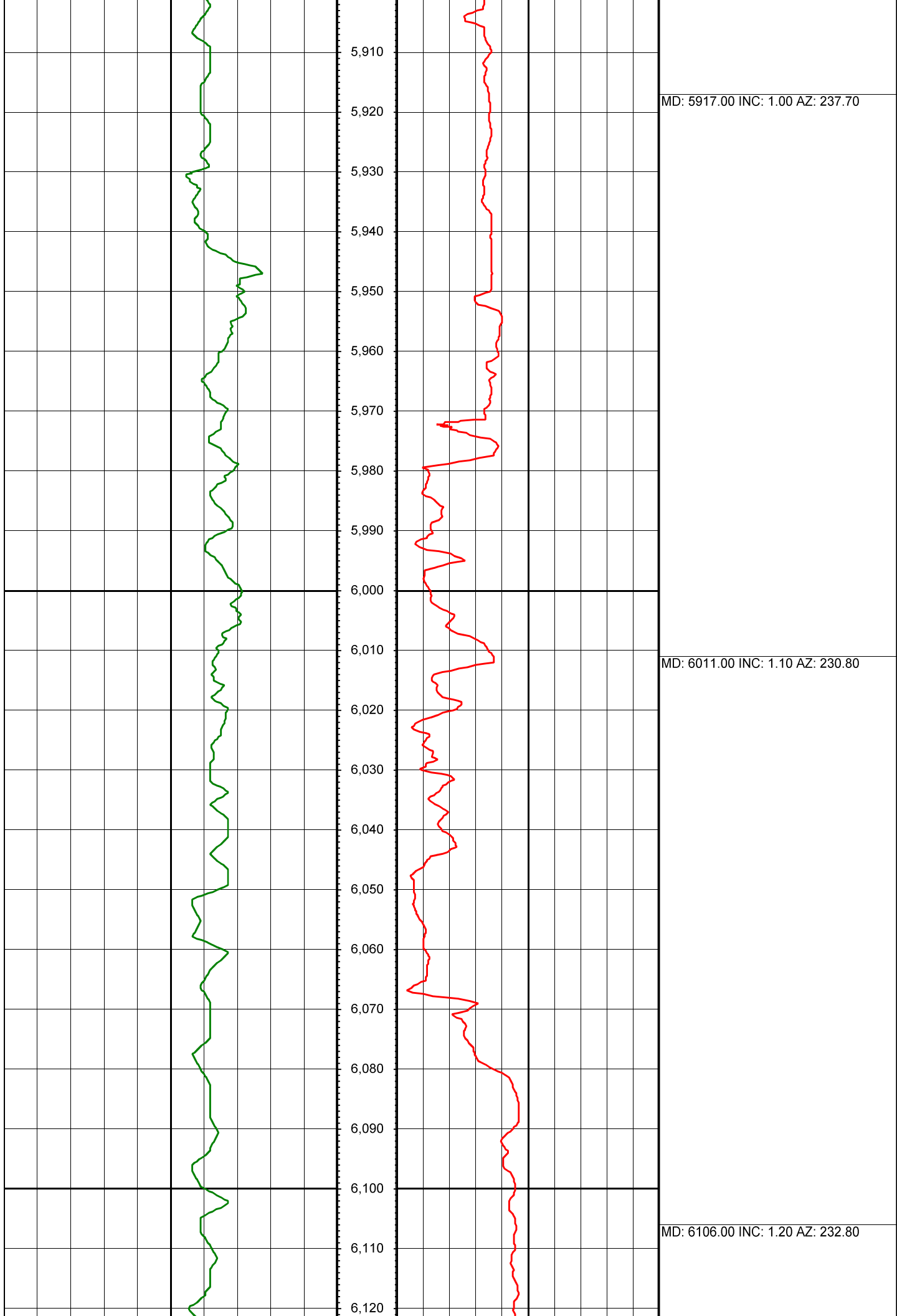
MD: 5538.00 INC: 0.90 AZ: 270.40

MD: 5633.00 INC: 0.80 AZ: 241.00



MD: 5727.00 INC: 1.10 AZ: 249.70

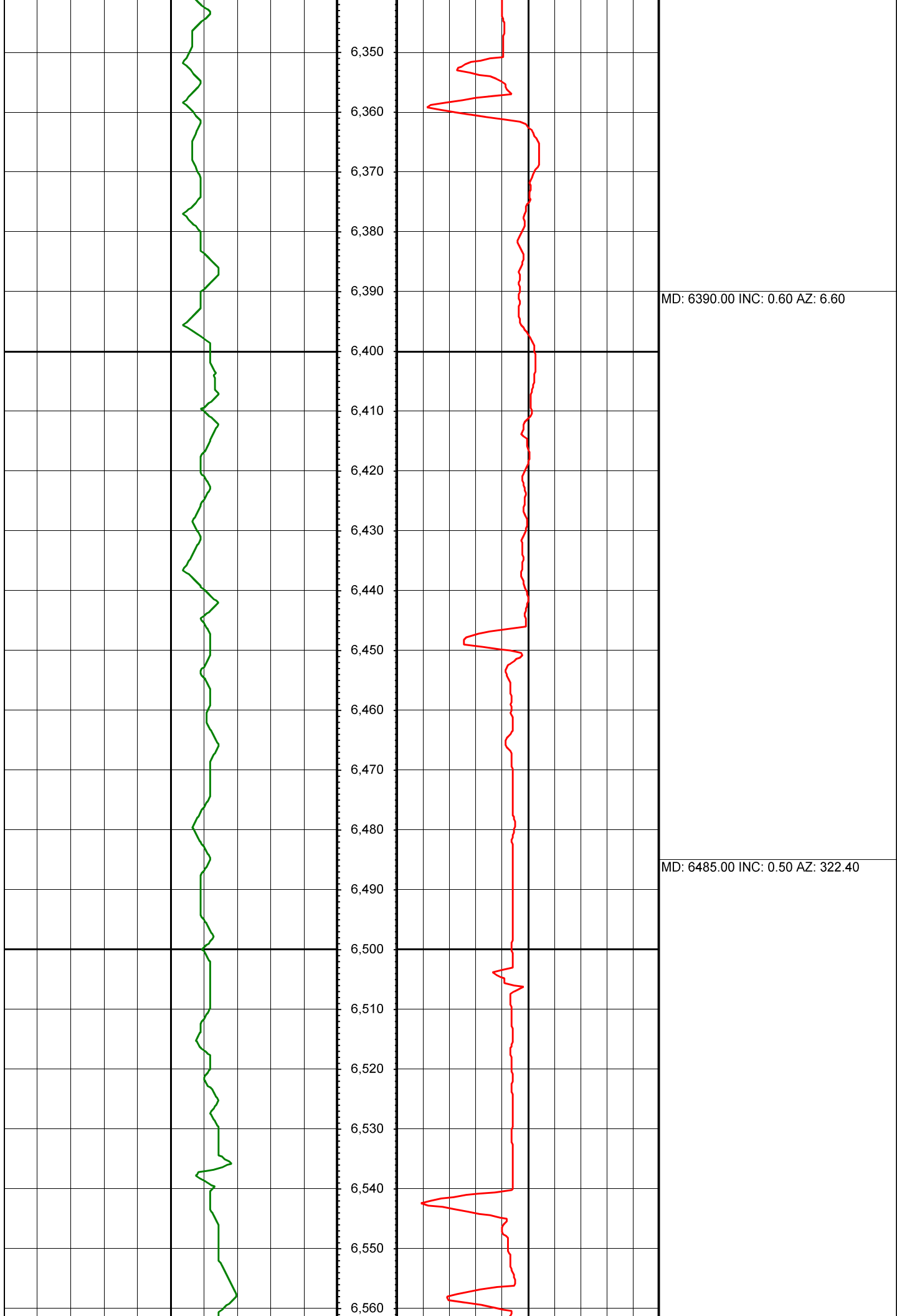
MD: 5822.00 INC: 1.00 AZ: 240.90

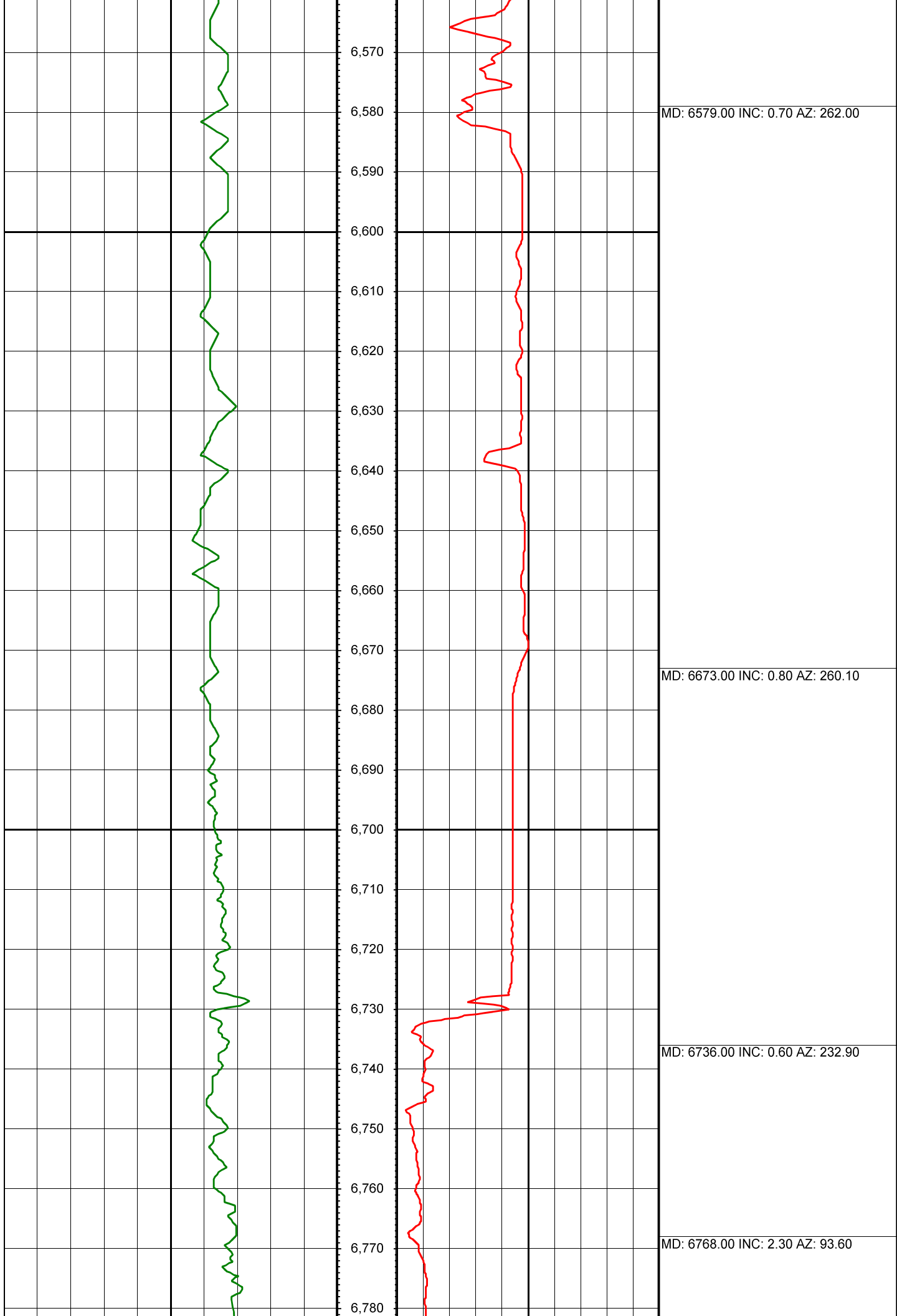


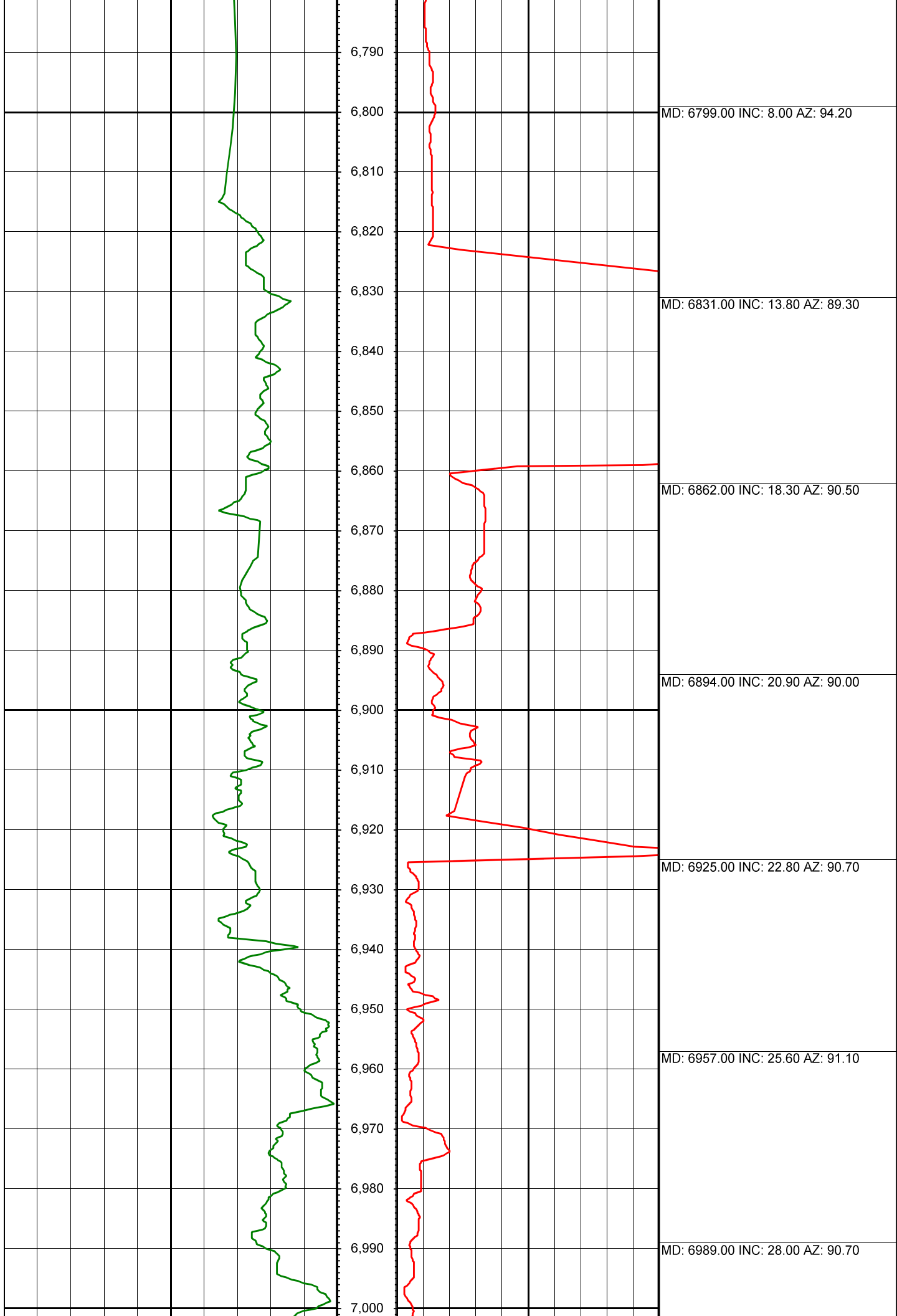


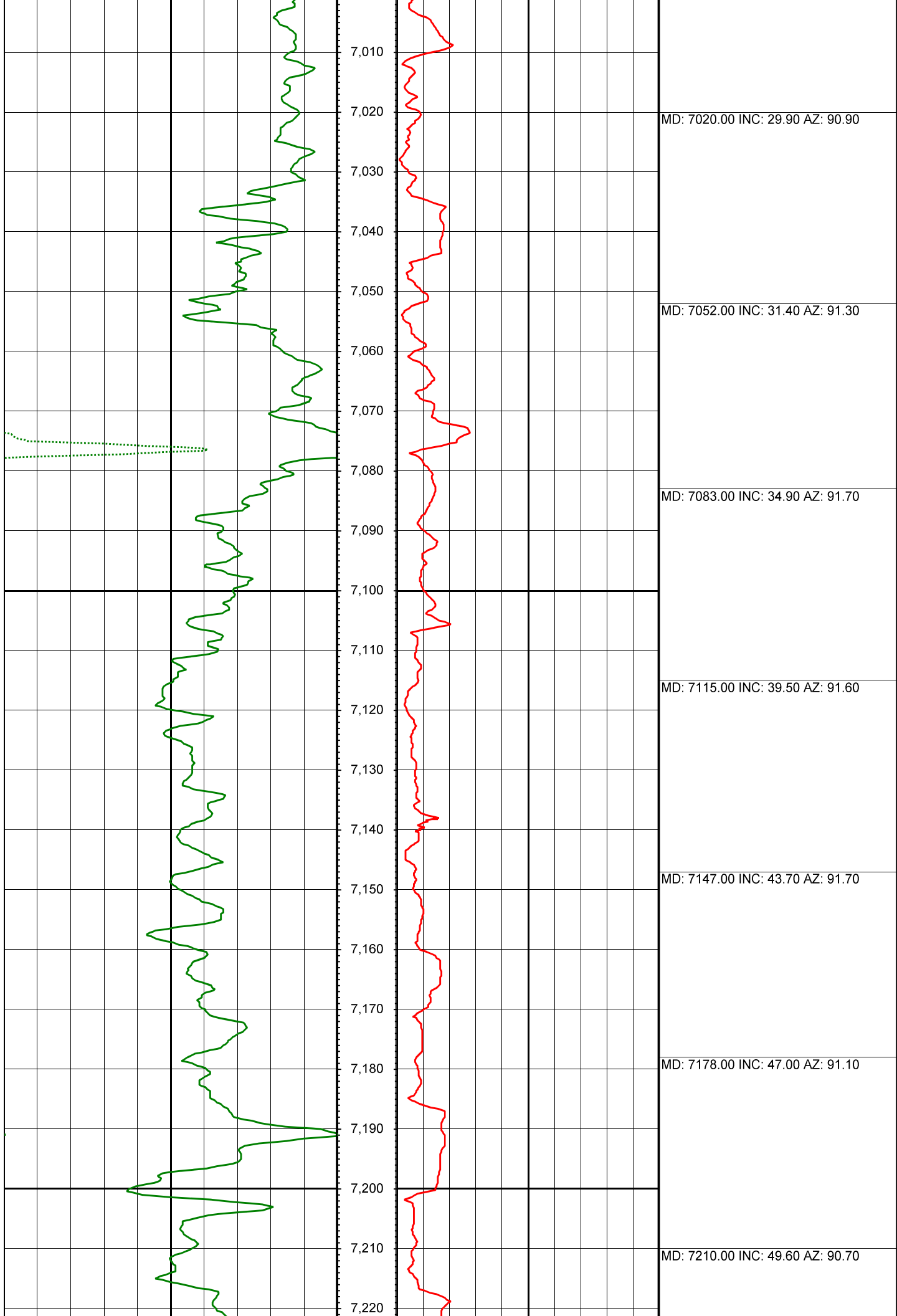
MD: 6201.00 INC: 1.10 AZ: 242.00

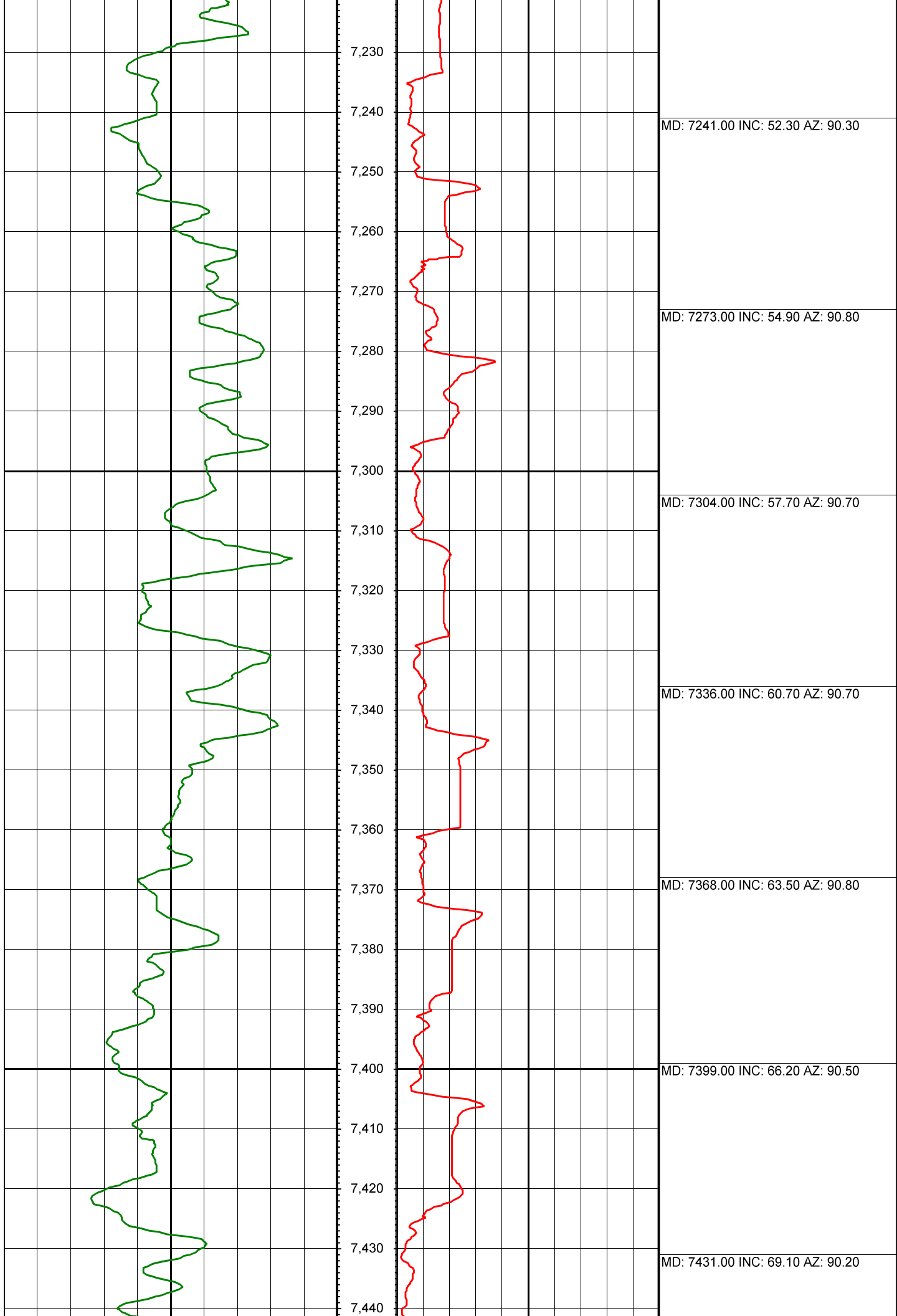
MD: 6295.00 INC: 1.20 AZ: 27.70

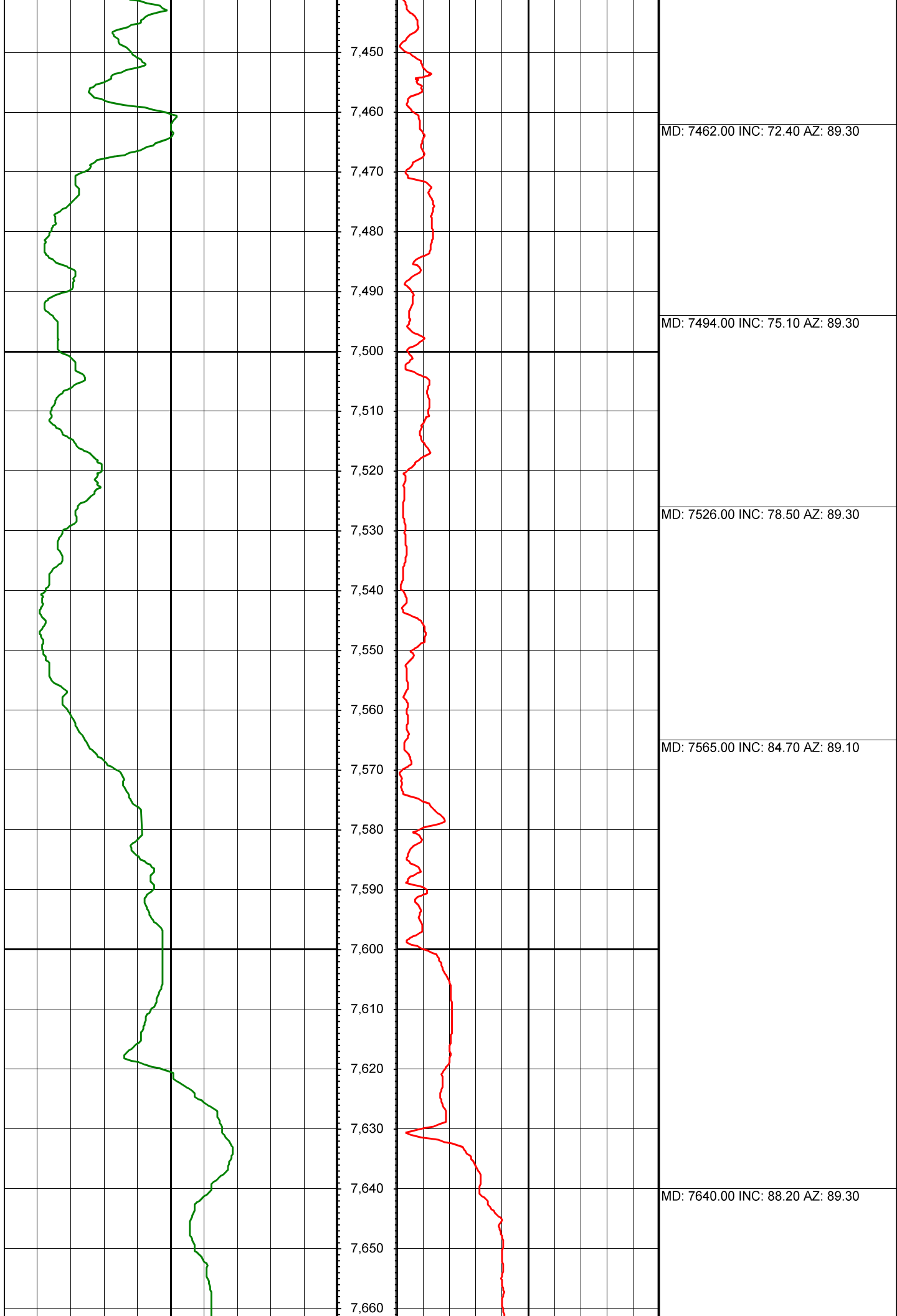














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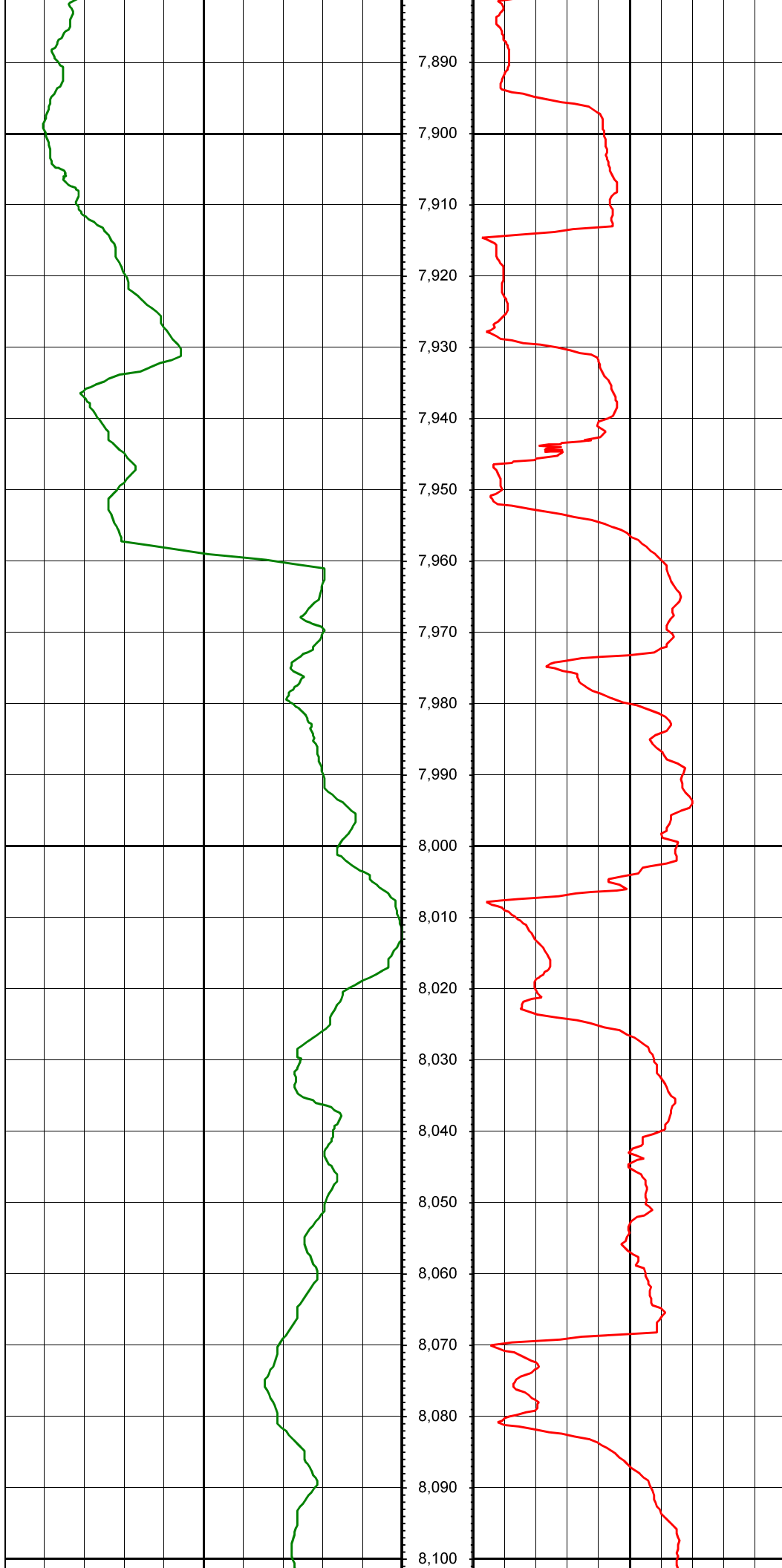
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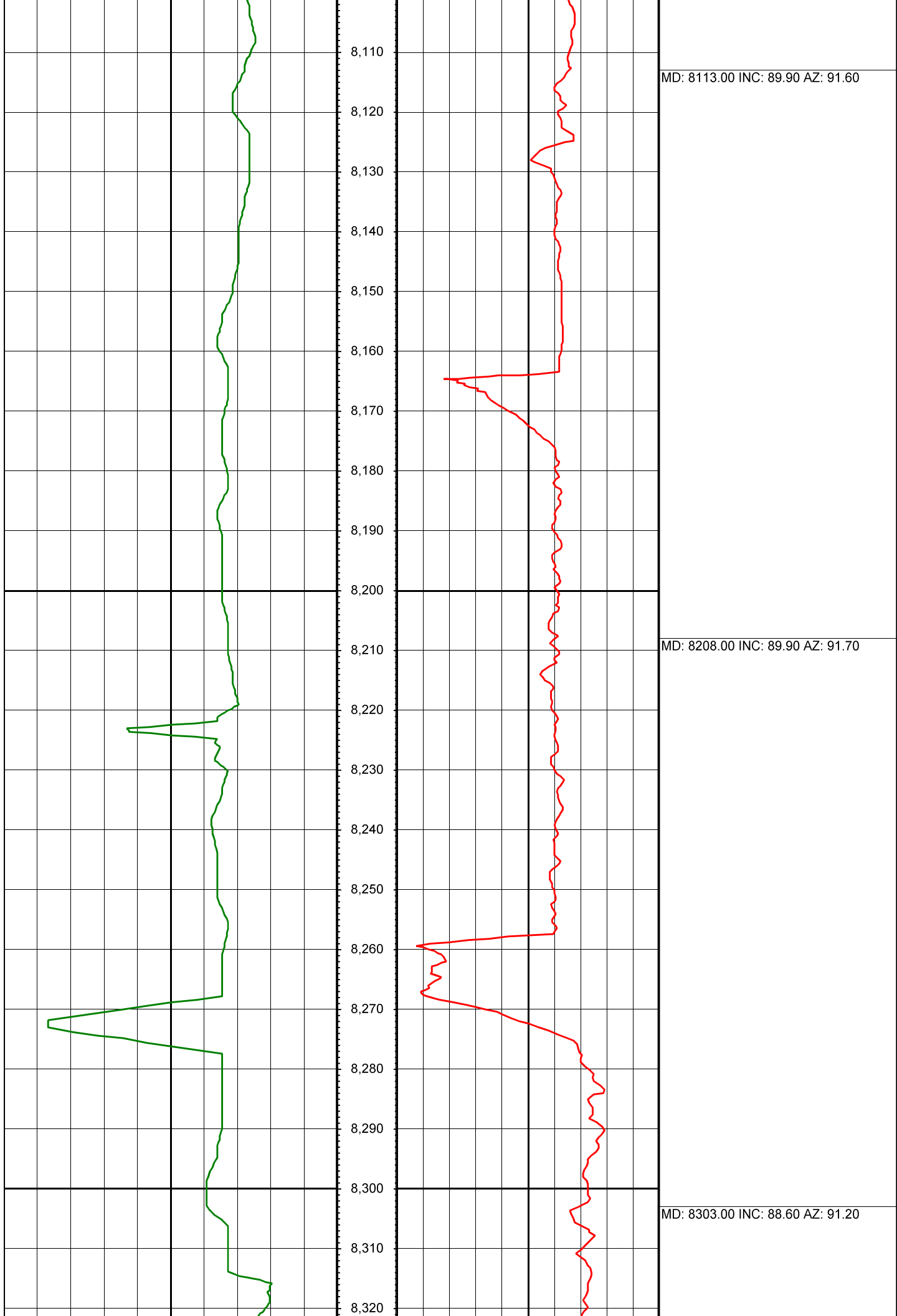
MD: 7735.00 INC: 87.50 AZ: 90.50

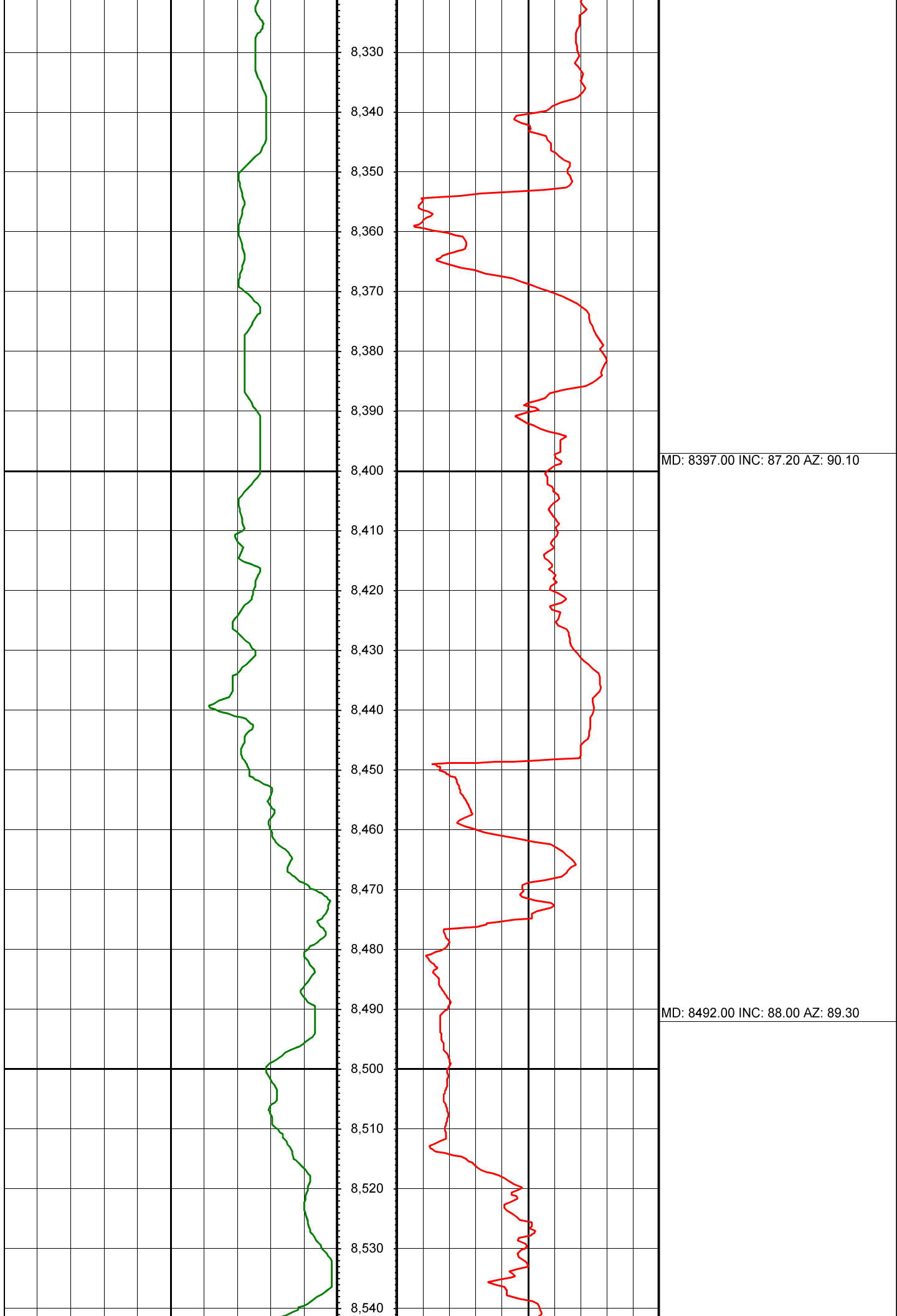
MD: 7829.00 INC: 84.10 AZ: 88.40

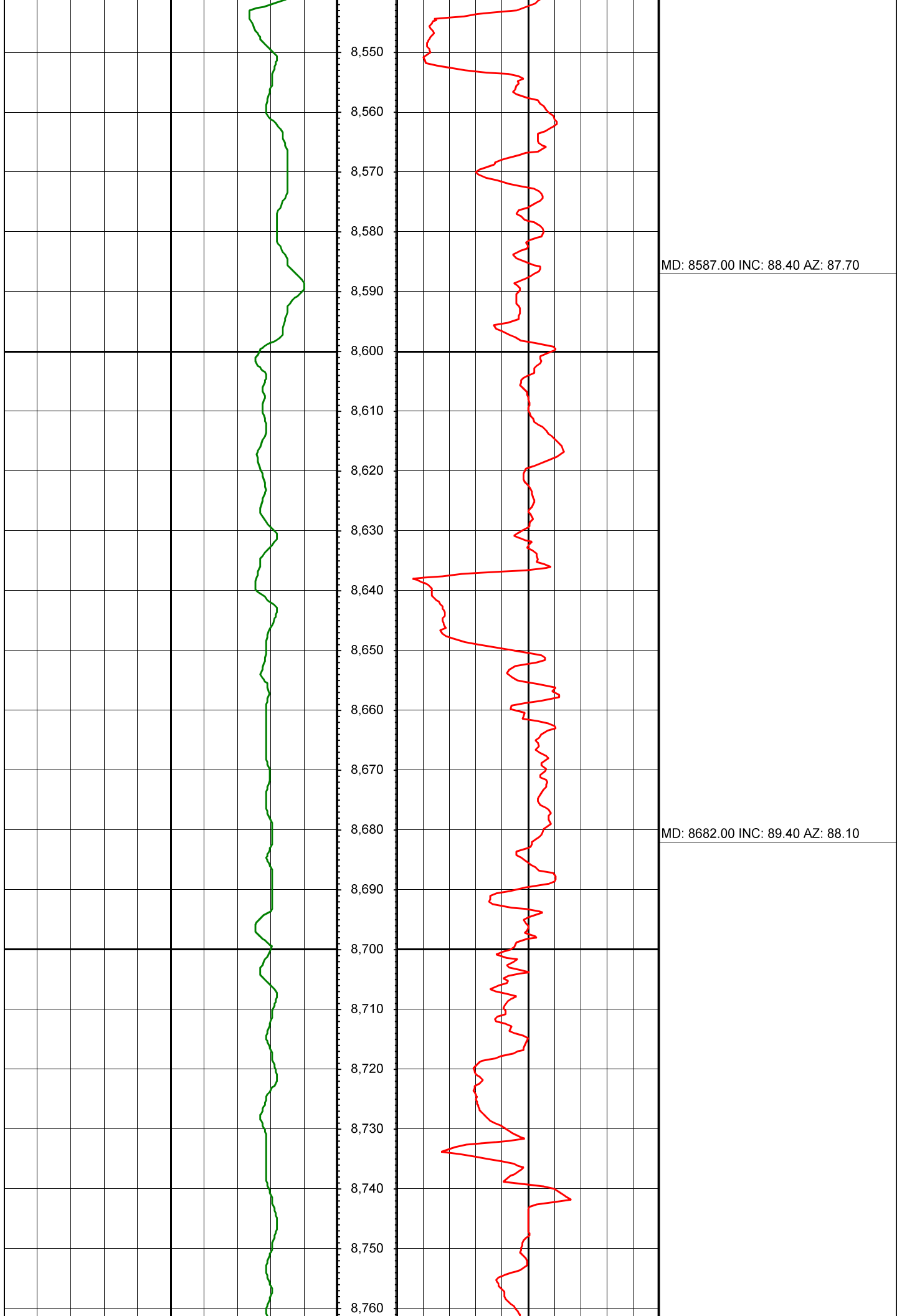


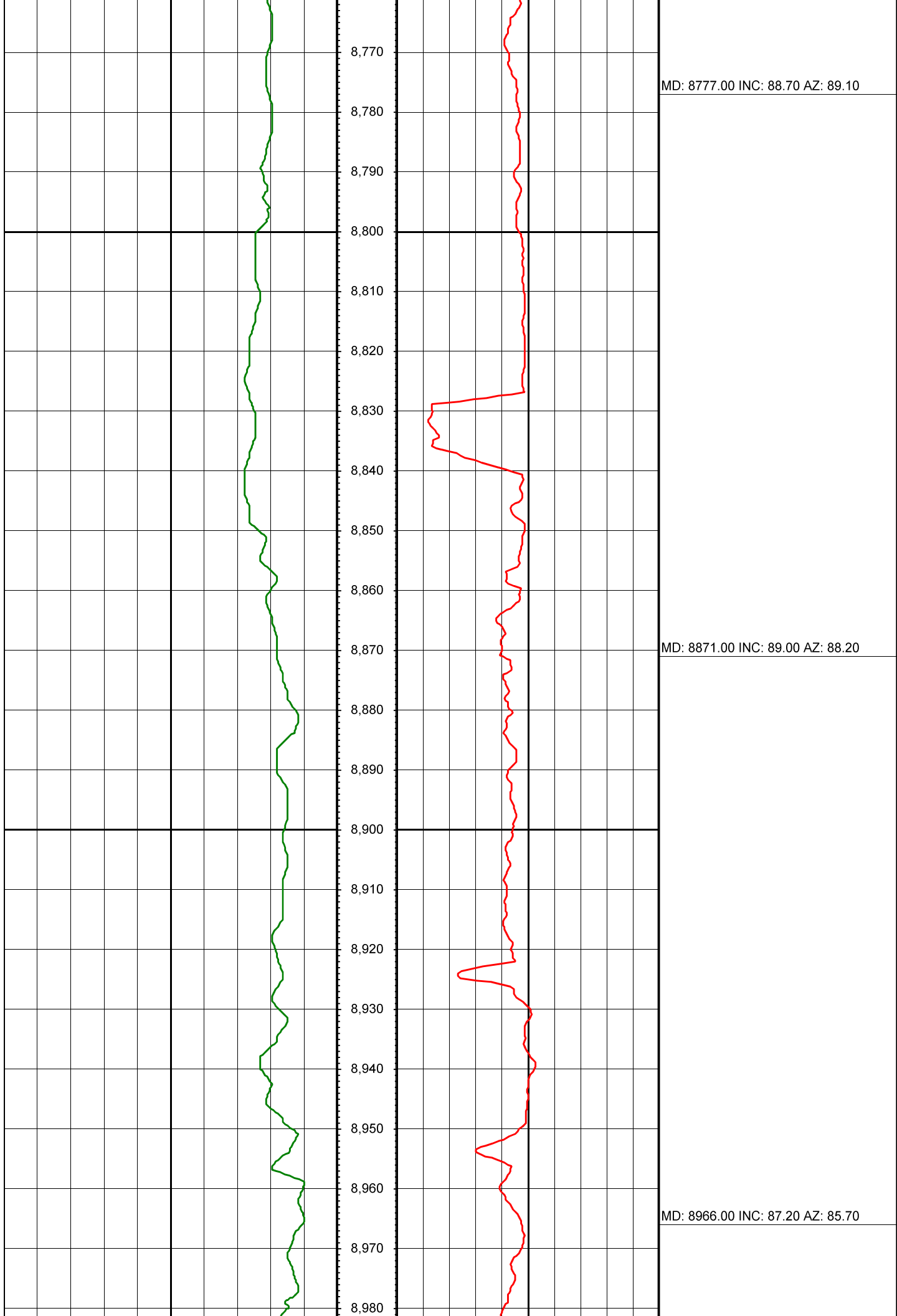
MD: 7924.00 INC: 89.90 AZ: 88.80

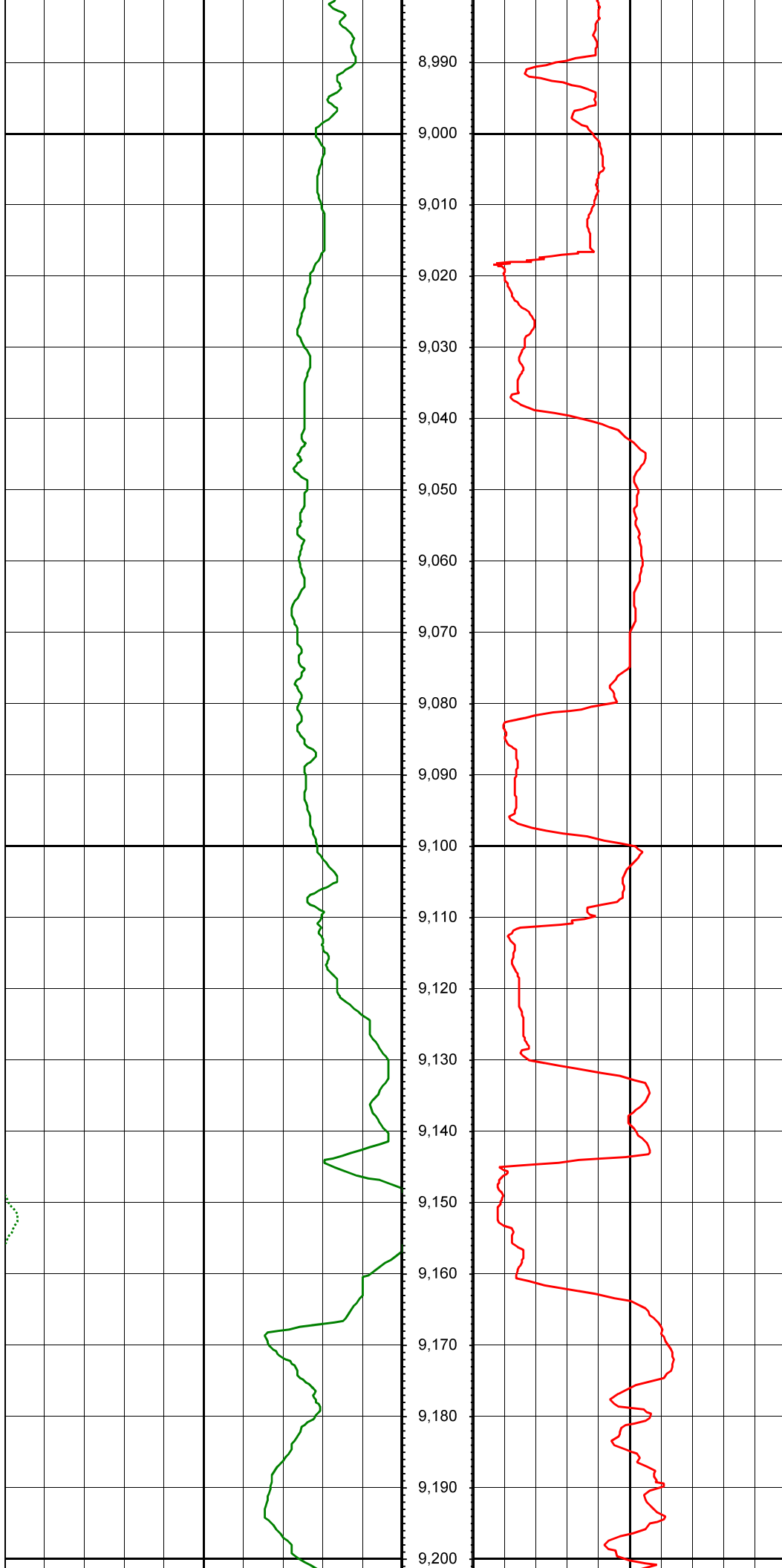
MD: 8019.00 INC: 90.90 AZ: 90.50





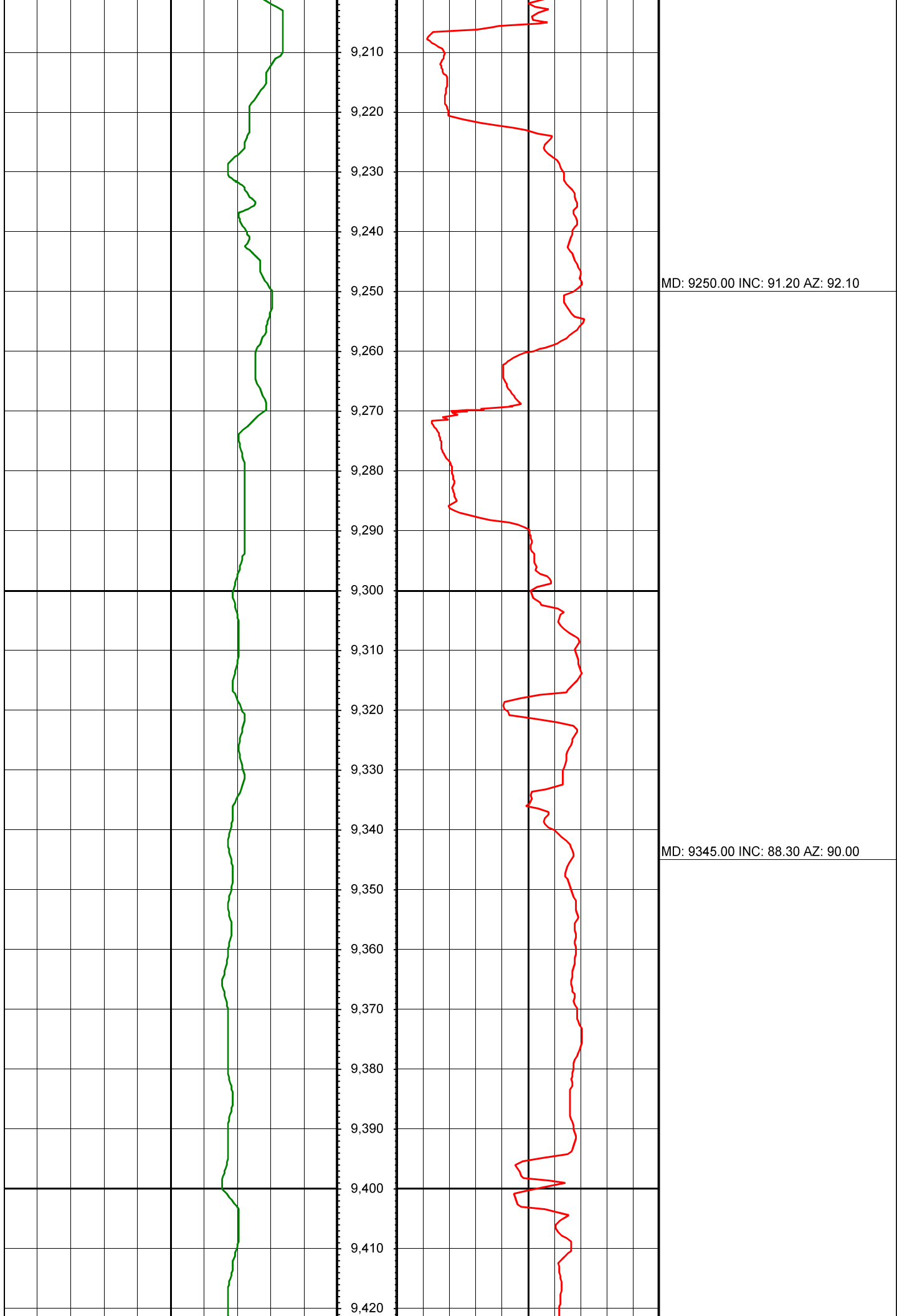


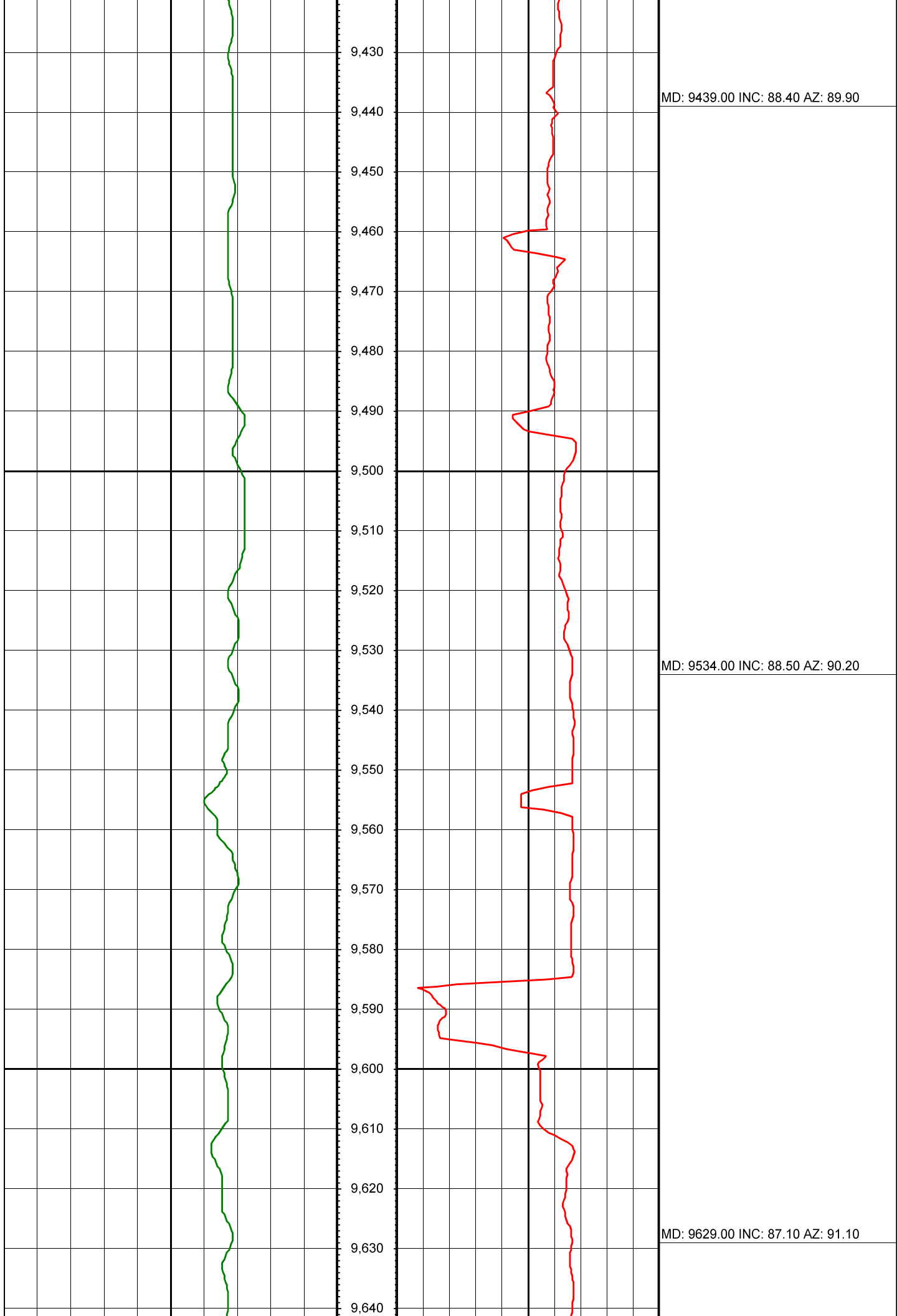


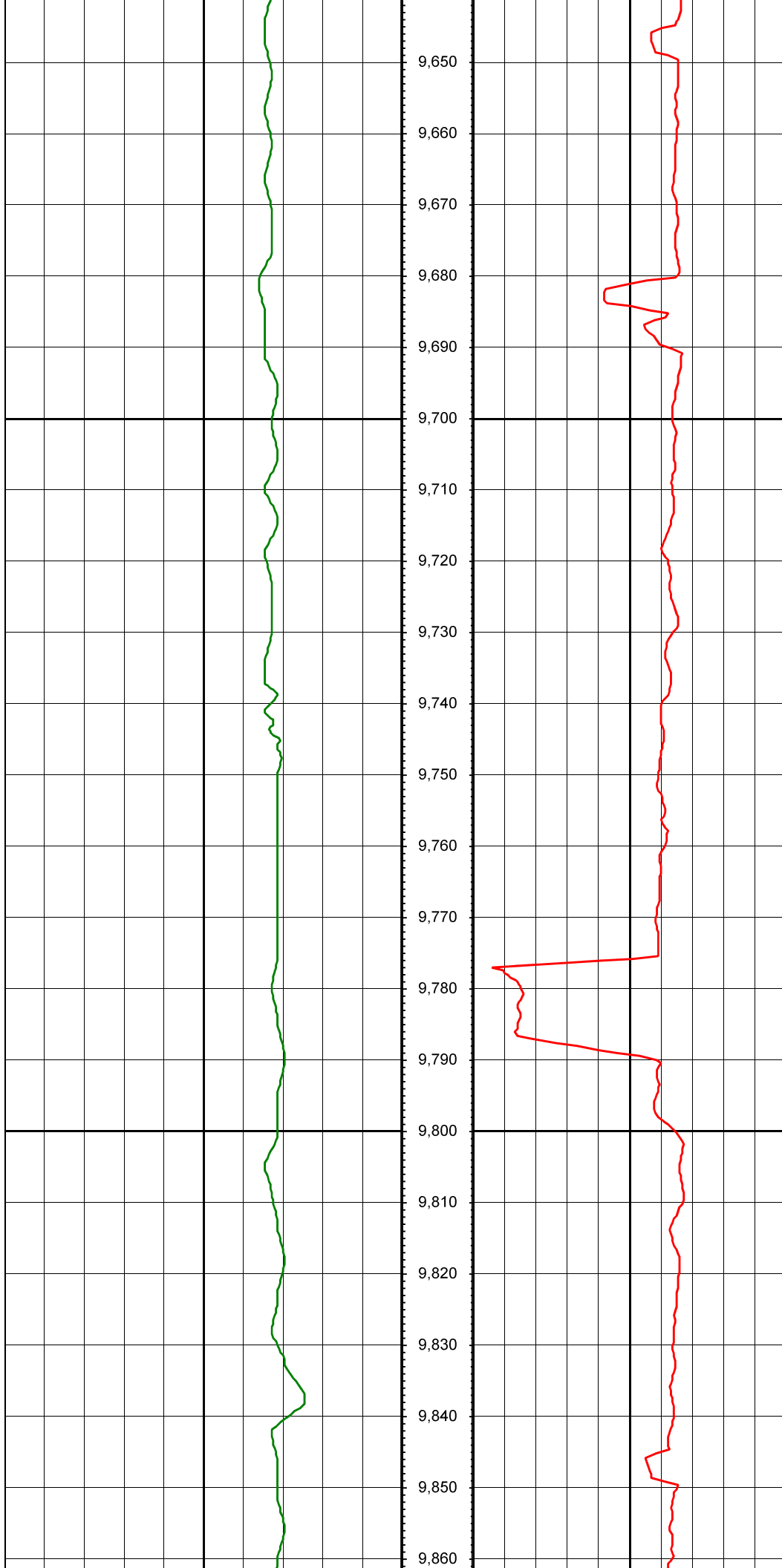


MD: 9061.00 INC: 88.30 AZ: 85.90

MD: 9155.00 INC: 92.00 AZ: 90.40

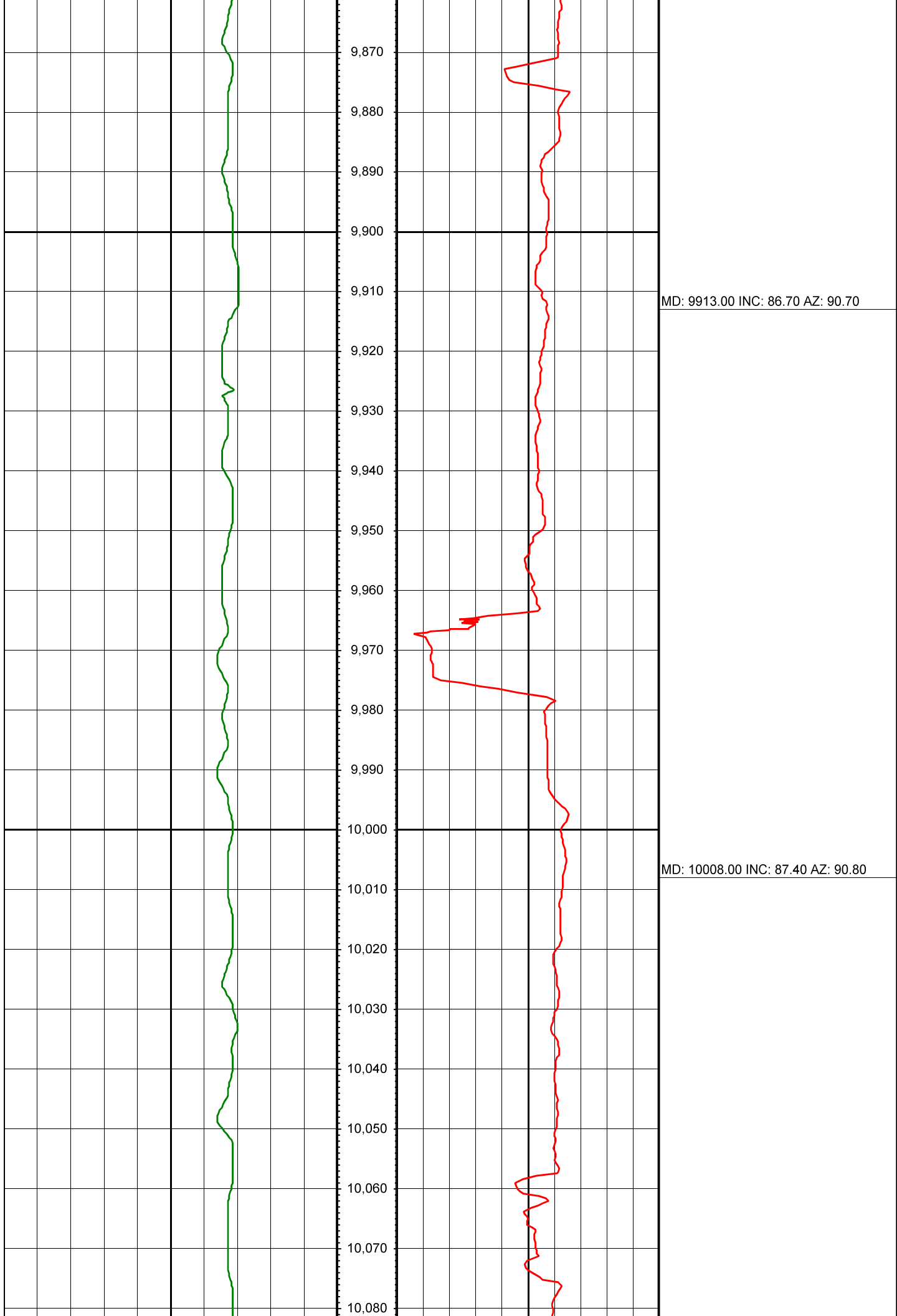


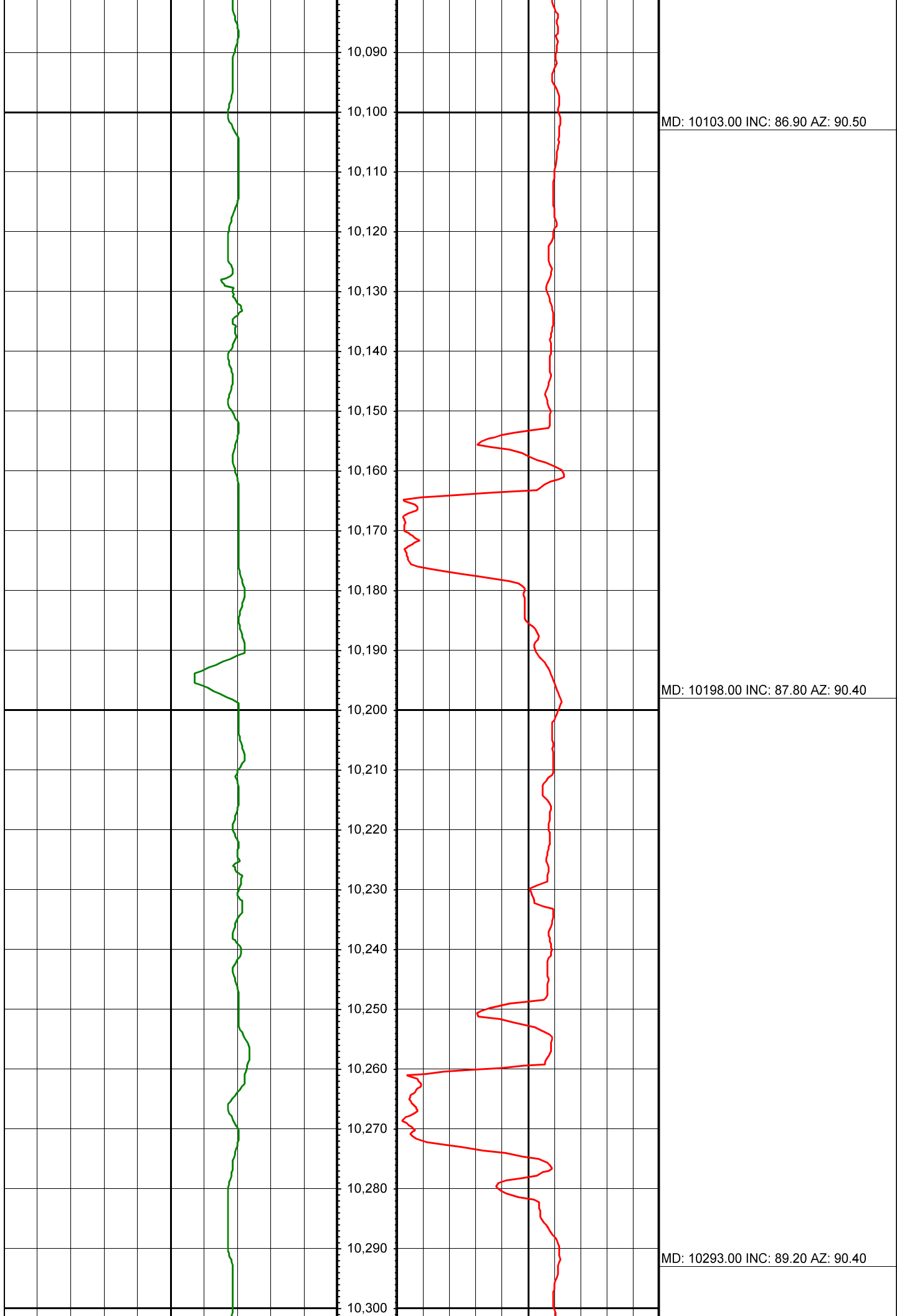




MD: 9724.00 INC: 86.50 AZ: 90.70

MD: 9818.00 INC: 87.70 AZ: 91.60







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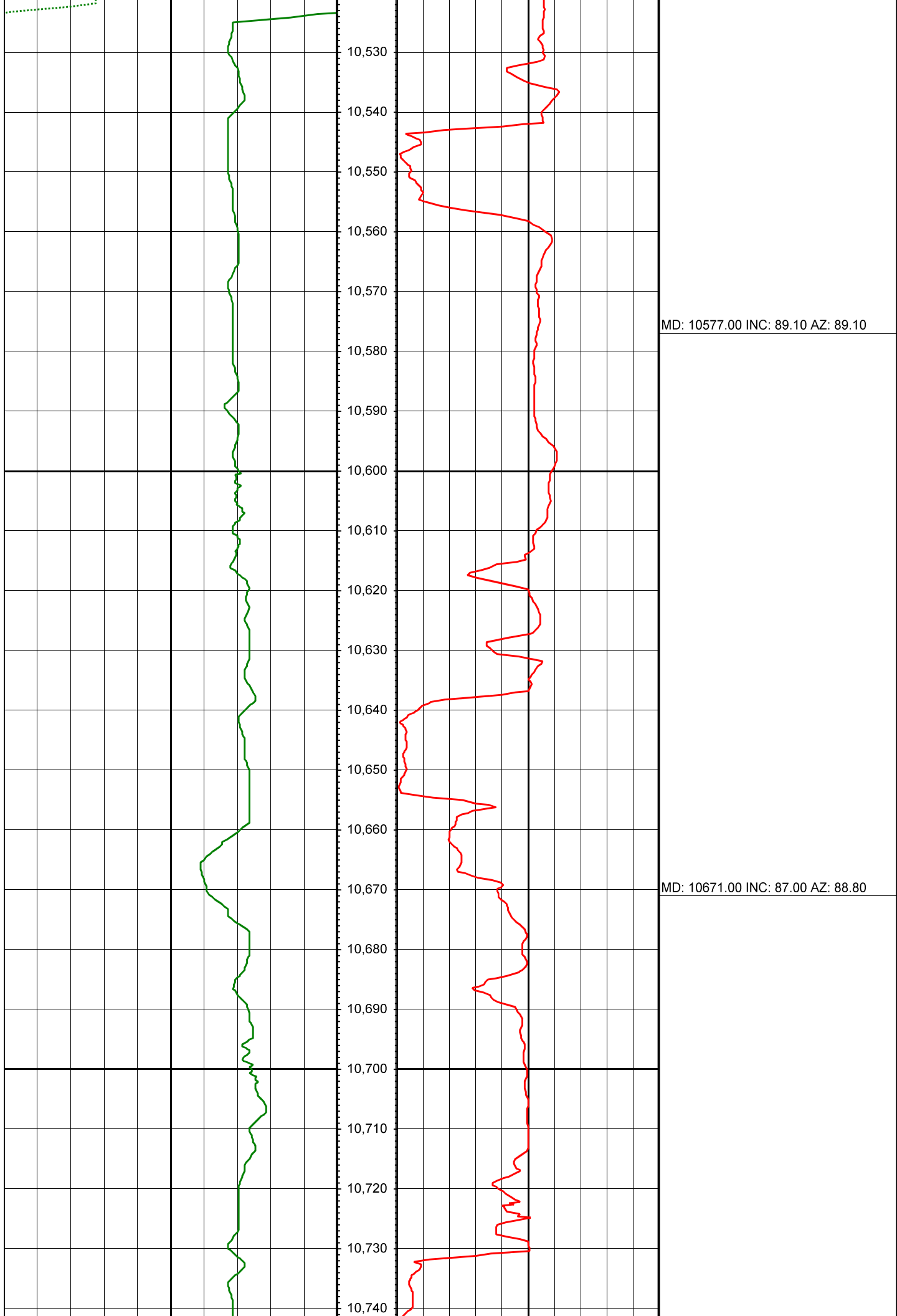
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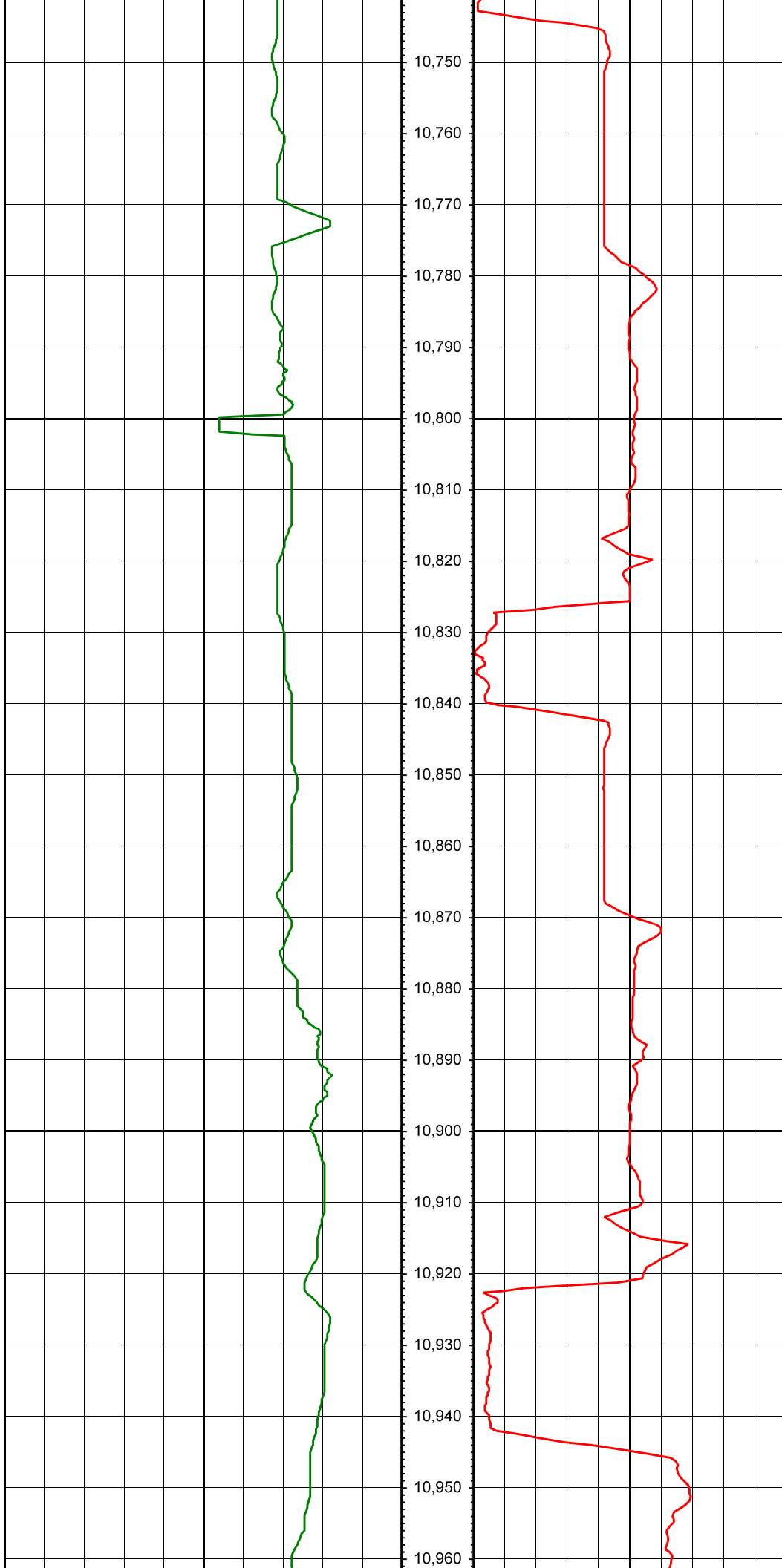
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10,520

MD: 10387.00 INC: 89.20 AZ: 89.90

MD: 10482.00 INC: 88.90 AZ: 88.80





MD: 10766.00 INC: 85.40 AZ: 88.70

MD: 10861.00 INC: 85.90 AZ: 89.00

MD: 10956.00 INC: 87.90 AZ: 90.40



MD: 11050.00 INC: 88.30 AZ: 90.50

MD: 11145.00 INC: 86.90 AZ: 88.00

