



Cathedral Energy Services
 1949 North Pyrite Road
 Casper, Wyoming 82604

145271

5":100' - TVD

11/4/2014 1:53:51 PM

CATHEDRAL

Oper. Company: Encana Oil & Gas (U.S.A.) Inc.
Country: U.S.A.
State / Province: Colorado
County / Parish: Weld
Started: 08/31/2014 05:00 AM

API/UWI: 05-123-37654-00
Field: Wattenburg (Niobrara - C Chalk)
Well: Grant Salisbury 2F-14H C268
Rig: Patterson UTI Drilling 272
Ended: 09/12/2014 05:00 PM

Gamma Ray
 Section Plane: 0.00
 Magnetic North: 8.66
 Gamma Attenuation Factor: 2.35
 Gamma Averaging: 7%

Personnel

Day Hand: R. Moulton
Night Hand: A. Clark
Comp. Emp: Leonard Clark

Location

Latitude: 40.1423340
Longitude: -104.973690
Elev. GL: 4886
Elev. DF:
Elev. KB: 4914.5

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

Hole Data

| Size | From | To |
|--------|------|-------|
| 12-1/4 | 0 | 920 |
| 8-3/4 | 920 | 7706 |
| 6-1/8 | 7706 | 13164 |

Casing Data

| Size | From | To |
|-------|------|-------|
| 9-5/8 | 0 | 899 |
| 7 | 0 | 7651 |
| 4-1/2 | 0 | 13145 |

Bit Sizes

| Size | From | To |
|--------|------|-------|
| 12-1/4 | 0 | 920 |
| 8-3/4 | 920 | 7706 |
| 6-1/8 | 7706 | 13164 |

Mud Data

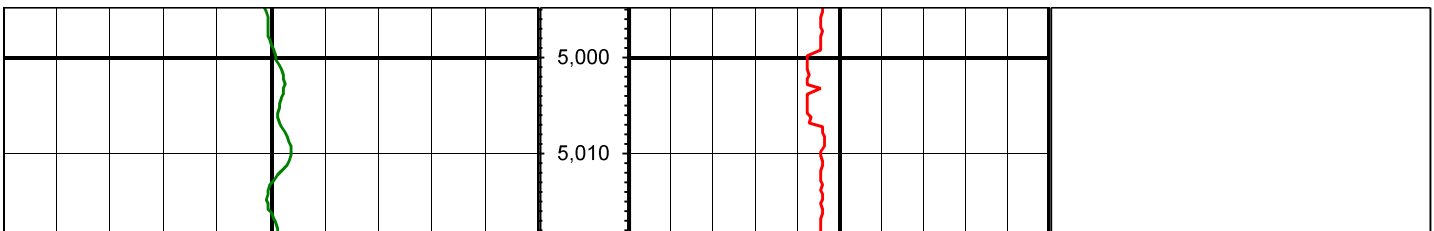
| Type | Weight | Density | Viscosity | Rm | Rmf | Rmc | From | To |
|------|--------|---------|-----------|----|-----|-----|------|----|
| | | | | | | | | |

Tool Run Data

| Serial Number | Gamma Offset | Resist. Offset | Start Time | Start Depth | End Time | End Depth |
|---------------|--------------|----------------|----------------------|-------------|----------------------|-----------|
| 1095 | 38.29 | 0 | 9/2/2014 12:58:57 AM | 5000 | 11/4/2014 1:30:57 PM | 7706 |
| 1095 | 39.73 | 0 | 9/6/2014 11:12:09 PM | 7706 | 9/12/2014 5:00:09 PM | 13164 |

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 TVD 0.00 ROP (FT/HR) 600.00 Surveys (MD/INC/AZ)
 150.00 2 300.00 FT





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5,180
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5,200
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MD: 5066.00 INC: 3.90 AZ: 92.40

MD: 5161.00 INC: 4.70 AZ: 101.90



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MD: 5255.00 INC: 3.90 AZ: 114.00

MD: 5350.00 INC: 3.30 AZ: 140.80

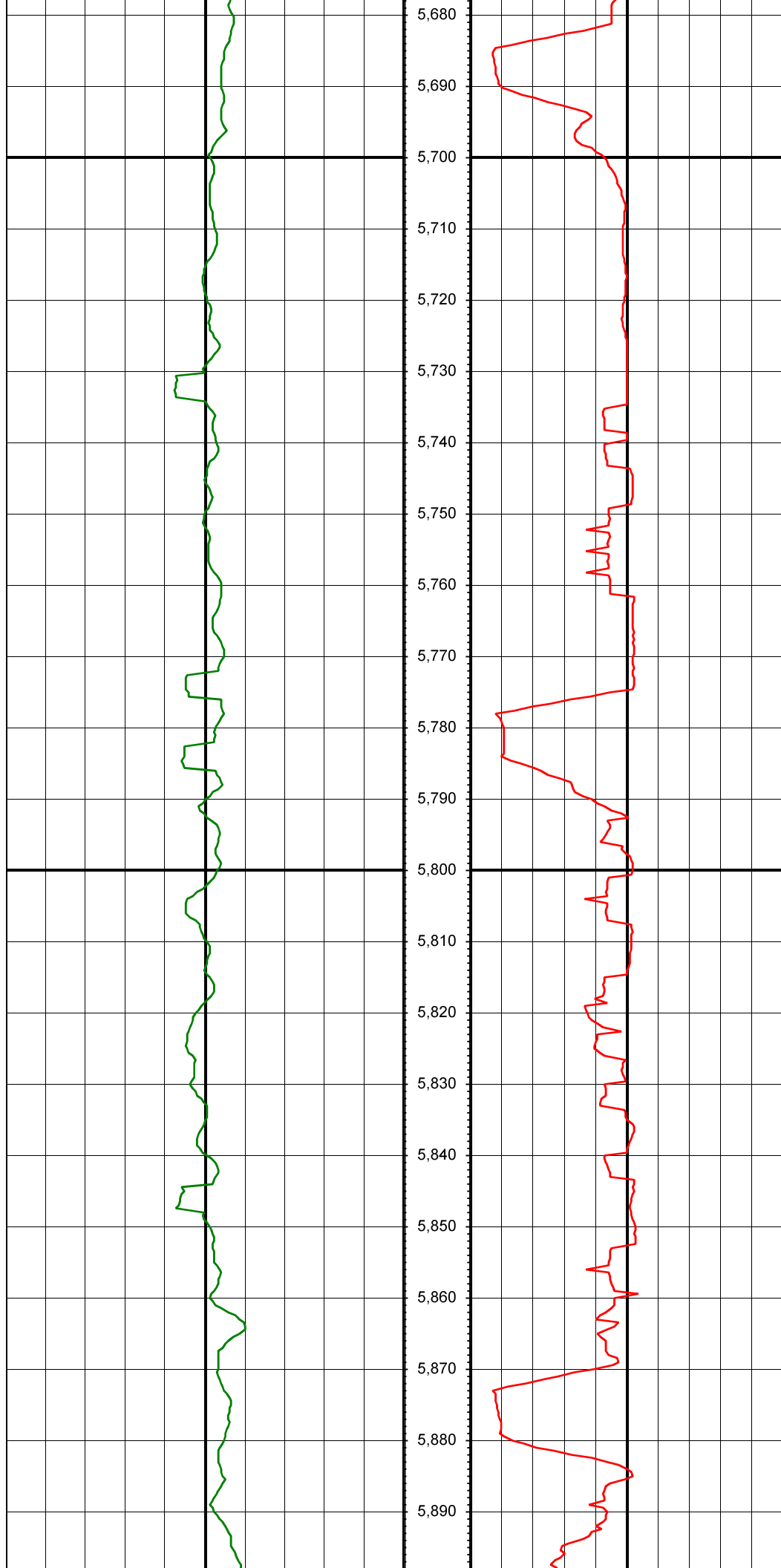
MD: 5444.00 INC: 2.60 AZ: 131.70



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MD: 5539.00 INC: 2.30 AZ: 136.00

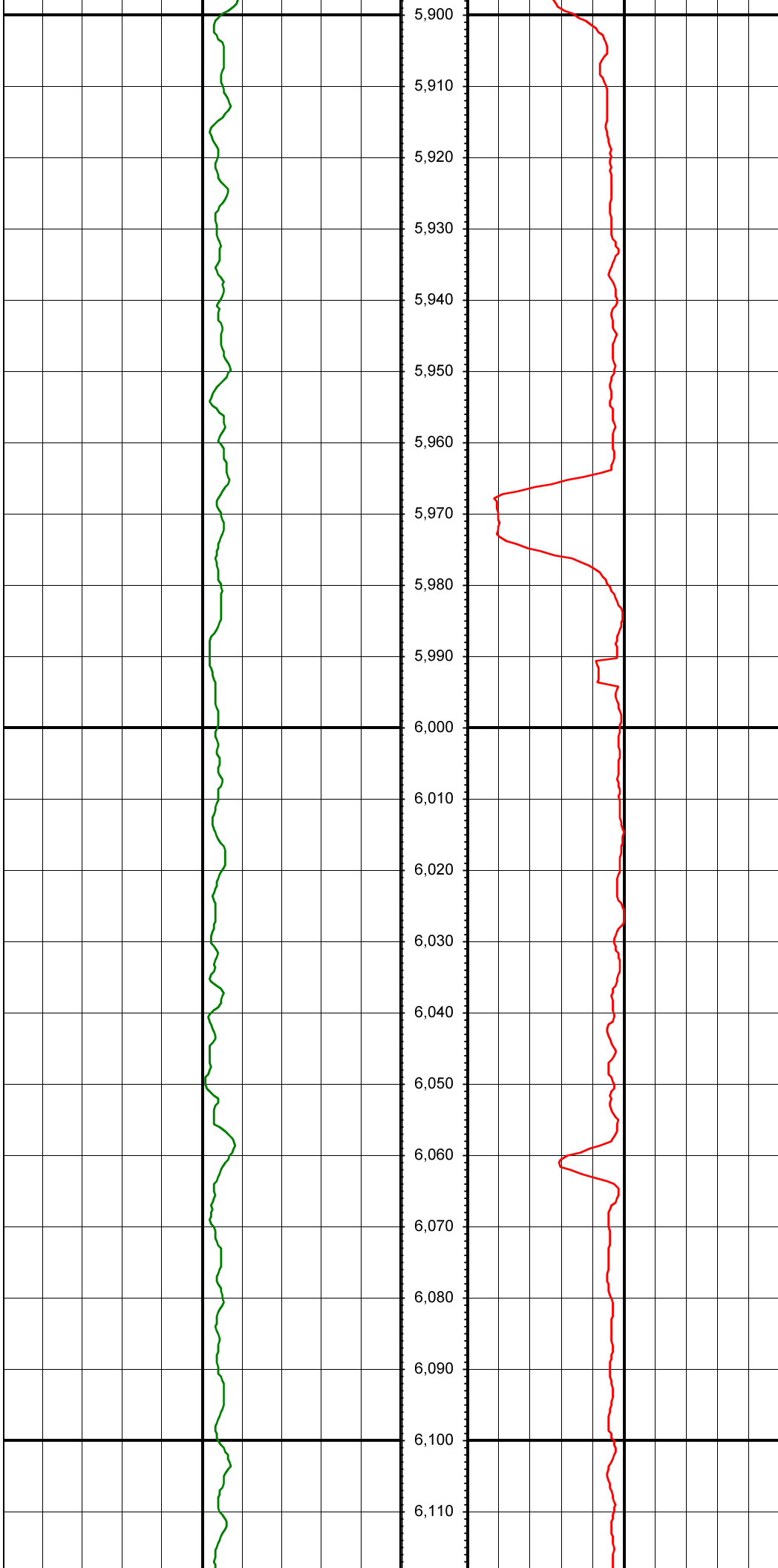
MD: 5633.00 INC: 0.80 AZ: 125.70



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MD: 5726.00 INC: 1.90 AZ: 85.40

MD: 5821.00 INC: 3.20 AZ: 79.90

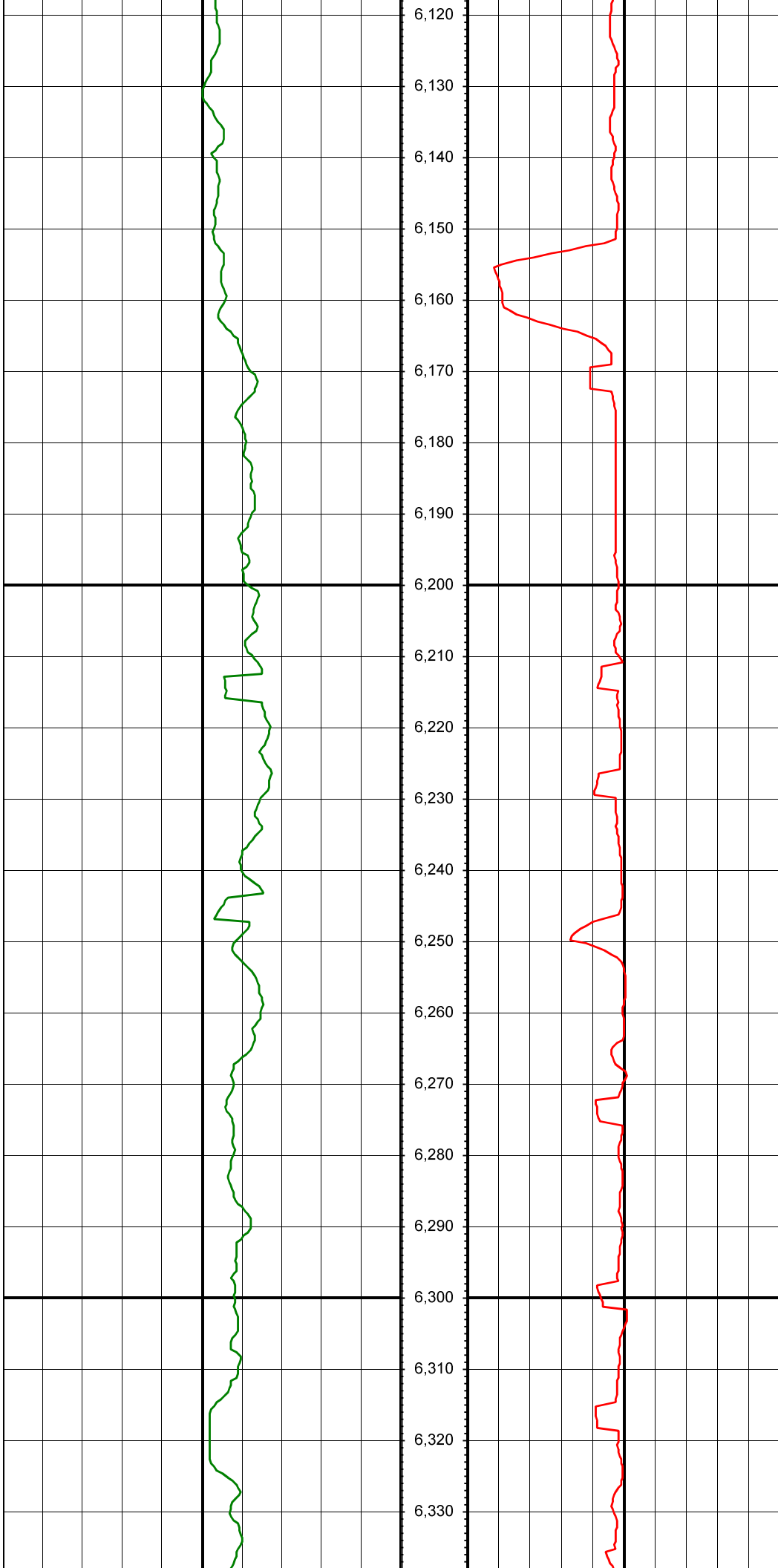


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MD: 5916.00 INC: 3.80 AZ: 91.70

MD: 6010.00 INC: 3.60 AZ: 104.60

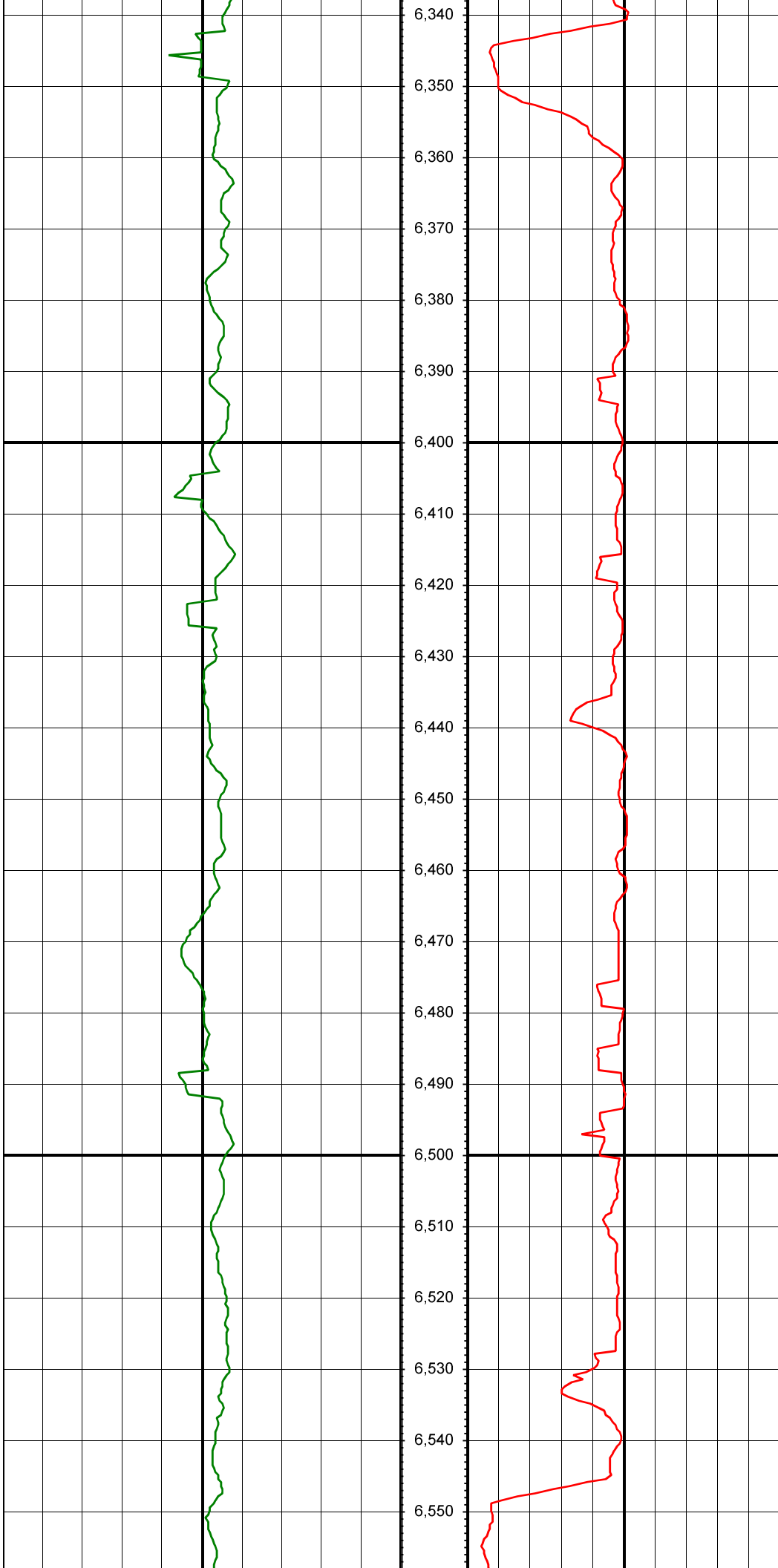
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MD: 6200.00 INC: 3.50 AZ: 103.60

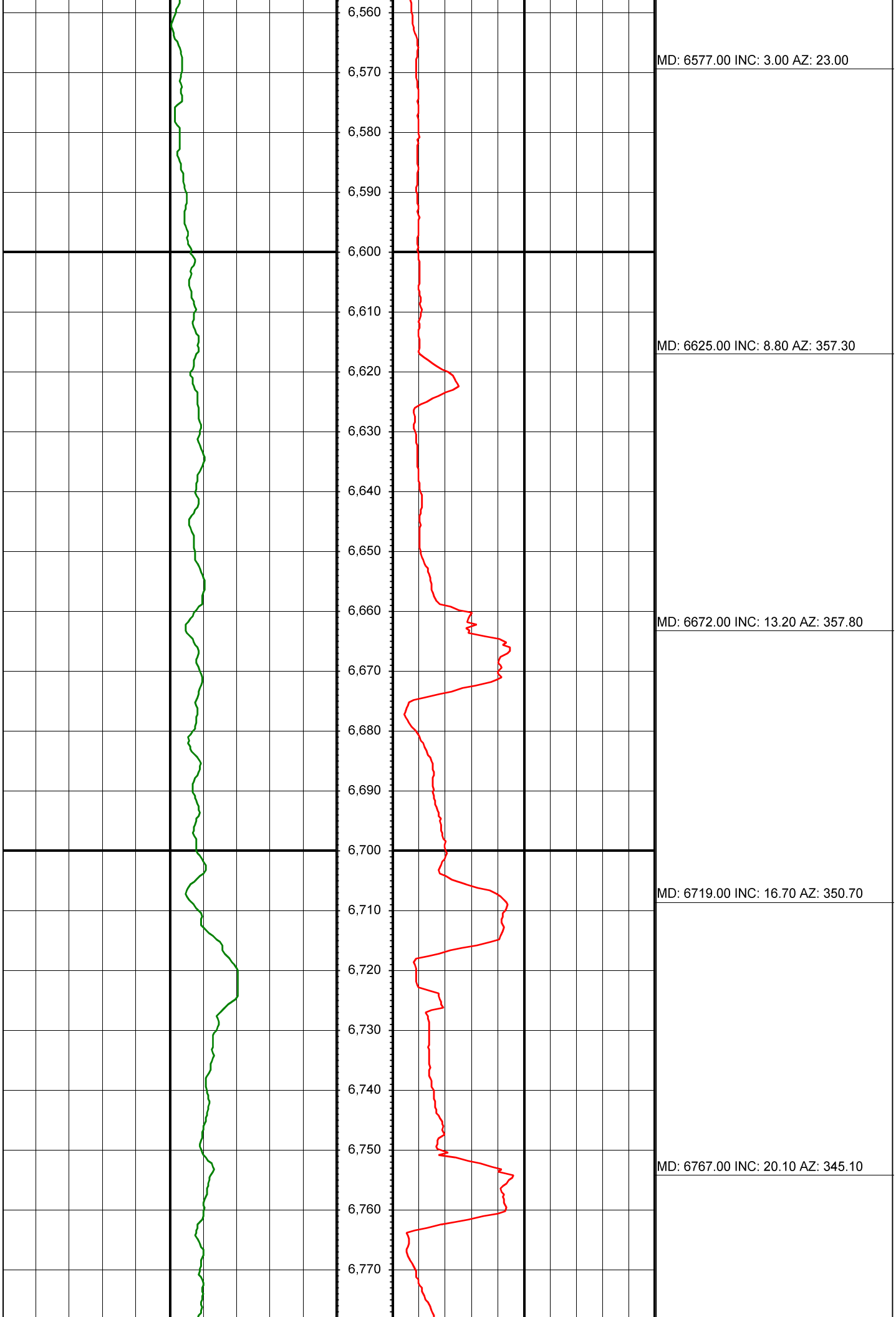
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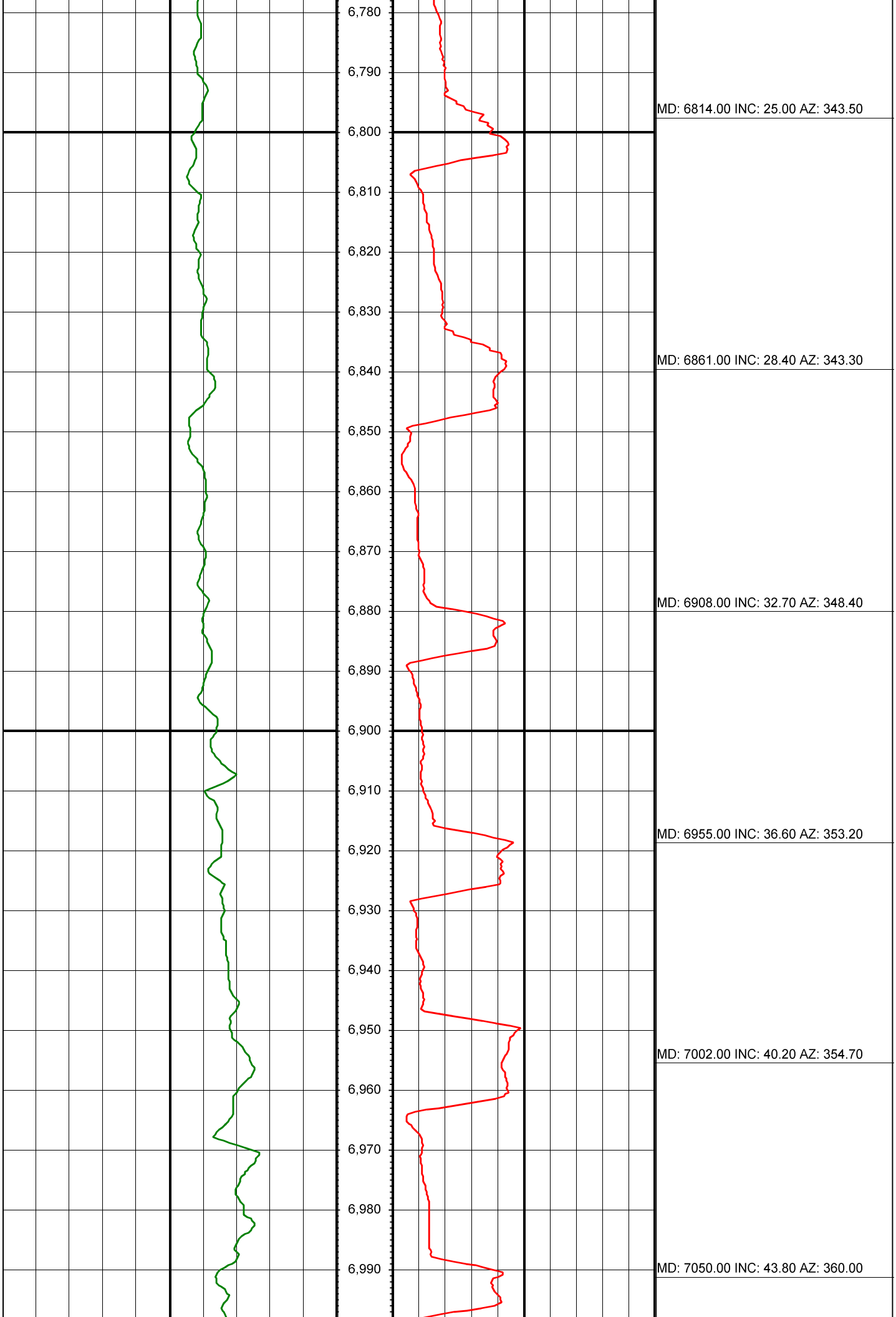


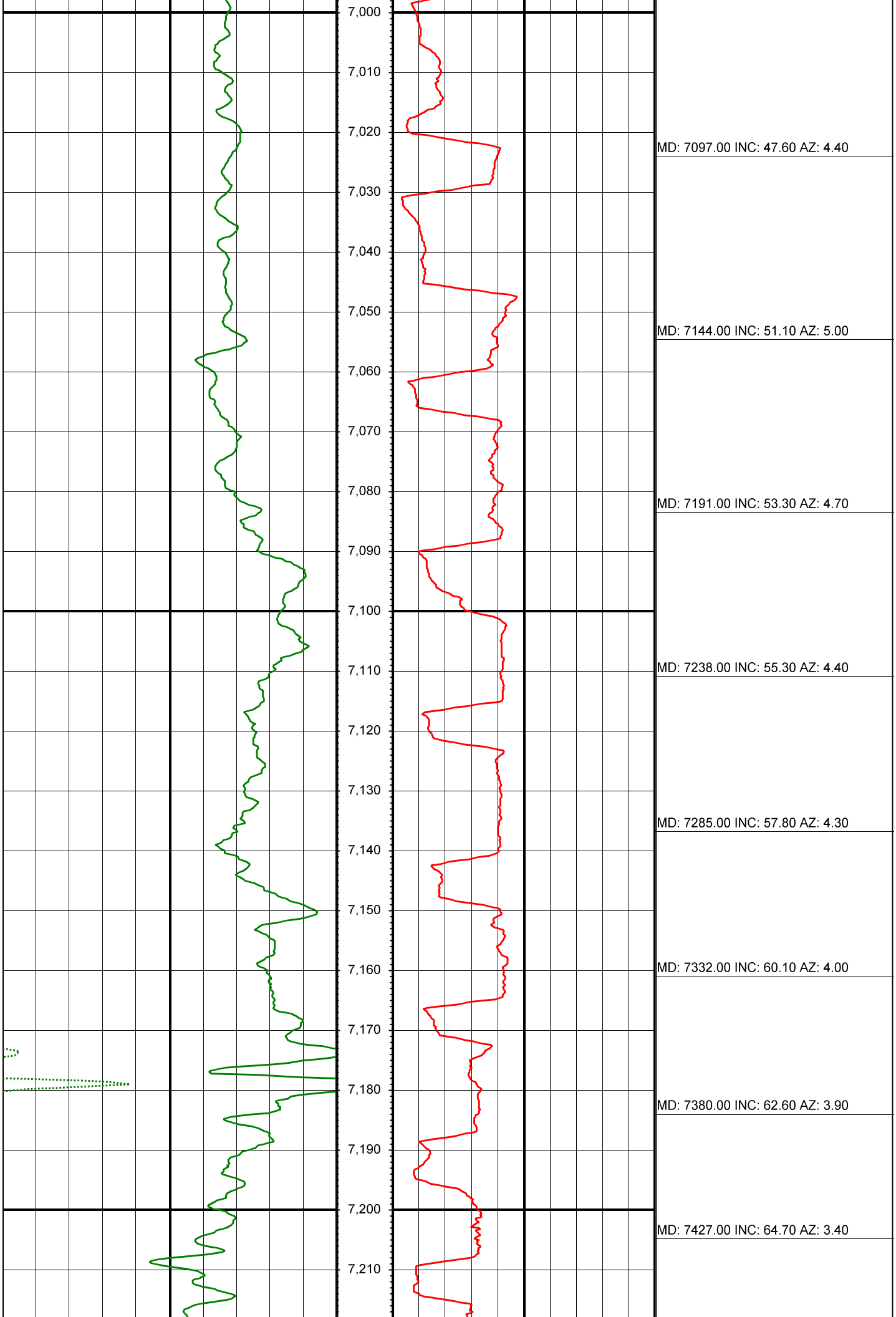
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MD: 6389.00 INC: 3.20 AZ: 104.00

MD: 6484.00 INC: 2.80 AZ: 96.60







MD: 7097.00 INC: 47.60 AZ: 4.40

MD: 7144.00 INC: 51.10 AZ: 5.00

MD: 7191.00 INC: 53.30 AZ: 4.70

MD: 7238.00 INC: 55.30 AZ: 4.40

MD: 7285.00 INC: 57.80 AZ: 4.30

MD: 7332.00 INC: 60.10 AZ: 4.00

MD: 7380.00 INC: 62.60 AZ: 3.90

MD: 7427.00 INC: 64.70 AZ: 3.40

