

| | |
|-----------|--------------------------|
| Rig: | ISDL 453 |
| Field: | Turrum |
| Location: | Bass Strait |
| Well: | MLA-A10A |
| Company: | ESSO Australia Pty. Ltd. |

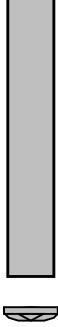


| | | | |
|--|---------------------------------------|------------------------------|----------------------------|
| <h1 style="text-align: center;">Gamma Ray Service</h1> <h2 style="text-align: center;">1:200 True Vertical Depth</h2> <h3 style="text-align: center;">Real Time Log</h3> | | | |
| Total depth: | | 3248.0 m | K.B. Top Drive |
| Spud date: | | 03-Aug-04 | G.L. -59.00 m |
| Runs: | | 1 To 5 | D.F. 27.91 m |
| Permanent datum: | | Mean Sea Level | Elev.: 0 m |
| Log measured from: | | Drill Floor | 27.91 m above Perm. datum |
| Depth reference: | | Driller's Depth | |
| API serial no. | Y = 5767920.06m N X = 606868.95m E | Longitude E148°13'15.712" | Latitude S38°13'49.320" |

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

| OTHER SERVICES FOR RUN1 Directional Drilling Directional Surveys | OTHER SERVICES FOR RUN2 Directional Drilling Directional Surveys | OTHER SERVICES FOR RUN3 Directional Drilling Directional Surveys |
|--|--|--|
| <p>REMARKS: RUN NUMBER 1</p> <p>8–1/2 in. hole was drilled from 644.0m to 754.0m MD</p> <p>Depth is referenced to Driller's Depth</p> <p>Gamma Ray corrected for Tool Size, Bit Size and Mud Weight</p> <p>Mud type KCl/PHPA/Glycol</p> <p>POOH to check BHA connections</p> | <p>REMARKS: RUN NUMBER 2</p> <p>8–1/2 in. hole was drilled from 754.0m to 763.0m MD</p> <p>Depth is referenced to Driller's Depth</p> <p>Gamma Ray corrected for Tool Size, Bit Size and Mud Weight</p> <p>Mud type KCl/PHPA/Glycol</p> <p>POOH to set cement plug</p> | <p>REMARKS: RUN NUMBER 3</p> <p>8–1/2 in. hole was drilled from 643.0m to 1459.0m MD</p> <p>Depth is referenced to Driller's Depth</p> <p>Gamma Ray corrected for Tool Size, Bit Size and Mud Weight</p> <p>Mud type KCl/PHPA/Glycol</p> <p>Data gap between 685–687m due to rig's drill line not spooling correctly requiring new draw–works calibration</p> <p>POOH for bit change</p> |
















| EQUIPMENT DESCRIPTION | | |
|--|--|--|
| RUN1 | RUN2 | RUN3 |
| <div>DOWNHOLE E</div> <div> <div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> <div> <div>24.6</div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> <div> <div>24.6</div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> </div> <div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> </div> | <div>DOWNHOLE E</div> <div> <div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> <div> <div>24.6</div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> <div> <div>24.6</div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> </div> <div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> </div> | <div>DOWNHOLE E</div> <div> <div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> <div> <div>24.6</div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> <div> <div>24.6</div> <div>6-3/4 in. Pow</div> <div>MDC: 40</div> <div>MEC: 10</div> <div>MDI: 1</div> <div>MGR: 14</div> <div>DHS: 7.1</div> </div> </div> <div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> <div> <div>D&I</div> <div>GR</div> <div>— 20.2</div> <div>— 19.6</div> </div> </div> |
| <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> | <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> | <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> <div>6-1/2 in. N</div> <div>S/N: L7</div> <div>16.1</div> |
| <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> | <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> | <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> <div>6-9/16 in. NM R</div> <div>S/N: GU2</div> <div>14.6</div> |
| <div>6-1/2 in. N</div> <div>S/N: ANA9</div> <div>12.4</div> <div>6-1/2 in. N</div> <div>S/N: ANA9</div> <div>12.4</div> <div>6-1/2 in. N</div> <div>S/N: ANA9</div> <div>12.4</div> | <div>6-1/2 in. N</div> <div>S/N: ANA9</div> <div>12.4</div> <div>6-1/2 in. N</div> <div>S/N: ANA9</div> <div>12.4</div> <div>6-1/2 in. N</div> <div>S/N: ANA9</div> <div>12.4</div> | <div>6-1/2 in. PMDC</div> <div>S/N: ANA9</div> <div>12.4</div> <div>6-1/2 in. PMDC</div> <div>S/N: ANA9</div> <div>12.4</div> <div>6-1/2 in. PMDC</div> <div>S/N: ANA9</div> <div>12.4</div> |
| <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> | <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> | <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> <div>6-11/16 in. F</div> <div>S/N: CMF</div> <div>9.6</div> |
| <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> | <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> | <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> <div>7 in. PowerPac</div> <div>A700GT</div> <div>S/N: N7</div> <div>1.41 deg. Bent</div> <div>8-3/8 in. Motor</div> <div>9.2</div> |

| | | |
|--|--|--|
|  <p>REED Hycalo OD: 8-1 RSX163 S/N</p> <p>Maximum string dia All lengths in</p> |  <p>REED Hycalo OD: 8-1 RSX163 S/N</p> <p>Maximum string dia All lengths in</p> |  <p>GeoDiamond OD 8-1 SN#207</p> <p>Maximum string dia All lengths in</p> |
|--|--|--|

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| | | |
|--|--|------------------------|
| OTHER SERVICES FOR RUN4 Directional Drilling Directional Surveys | OTHER SERVICES FOR RUN5 Directional Drilling Directional Surveys | OTHER SERVICES FOR RUN |
| REMARKS: RUN NUMBER 4 8-1/2 in. hole was drilled from 1459.0m to 1839.0m MD Depth is referenced to Driller's Depth Gamma Ray corrected for Tool Size, Bit Size and Mud Weight Mud type is KCI/PHPA/Glycol POOH for bit change | REMARKS: RUN NUMBER 5 8-1/2 in. hole was drilled from 1839.0m to 3248.0m MD Depth is referenced to Driller's Depth Gamma Ray corrected for Tool Size, Bit Size and Mud Weight Mud type is KCI/PHPA/Glycol POOH due to reaching TD of MLA-A10A | REMARKS: RUN NUMBER |

| EQUIPMENT DESCRIPTION | | |
|-----------------------|------------|-----|
| RUN4 | RUN5 | RUN |
| DOWNHOLE E | DOWNHOLE E | |

| | | | | |
|---|---|--|---|--|
| 6-3/4 in. Pow MDC: 40 MEC: 10 MDI: 1 MGR: 14 DHS: 7.1 |  | 24.6 6-3/4 in. Pow MDC: 40 MEC: 10 MDI: 1 MGR: 14 DHS: 7.1 |  | 24.6 6-3/4 in. Pow MDC: 40 MEC: 10 MDI: 1 MGR: 14 DHS: 7.1 |
| D&I GR |  | 20.2 19.6 | D&I GR | 20.2 19.6 |
| 6-1/2 in. N S/N: L |  | 16.1 6-1/2 in. N S/N: L |  | 16.1 6-1/2 in. N S/N: L |
| 6-9/16 in. NM R S/N: GU2 |  | 14.6 6-9/16 in. NM R S/N: GU2 |  | 14.6 6-9/16 in. NM R S/N: GU2 |
| 6-1/2 in. N S/N: ANA |  | 12.4 6-1/2 in. N S/N: ANA |  | 12.4 6-1/2 in. N S/N: ANA |
| 6-11/16 in. F S/N: CMF |  | 9.6 6-11/16 in. F S/N: CMF |  | 9.6 6-11/16 in. F S/N: CMF |
| 7 in. PowerPa A700G1 S/N: N7 1.41 deg. Bent 8-3/8 in. Mot |  | 9.2 7 in. PowerPa A700G1 S/N: N7 1.41 deg. Bent 8-3/8 in. Mot |  | 9.2 7 in. PowerPa A700G1 S/N: N7 1.41 deg. Bent 8-3/8 in. Mot |
| REED Hycalo OD: 8-1 RSX163 S/N |  | 0.2 REED Hycalo OD: 8-1 RSX163 S/N |  | 0.2 REED Hycalo OD: 8-1 RSX163 S/N |

Maximum string dia
All lengths in

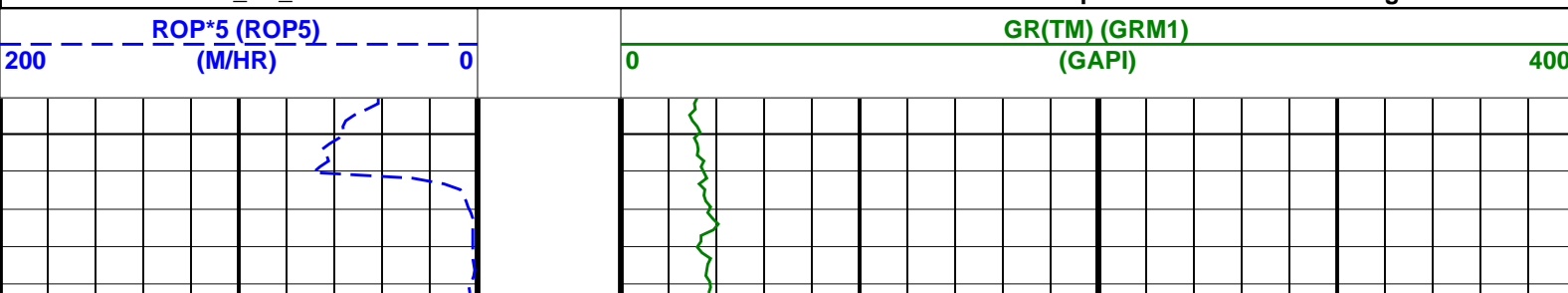
Maximum string dia
All lengths in

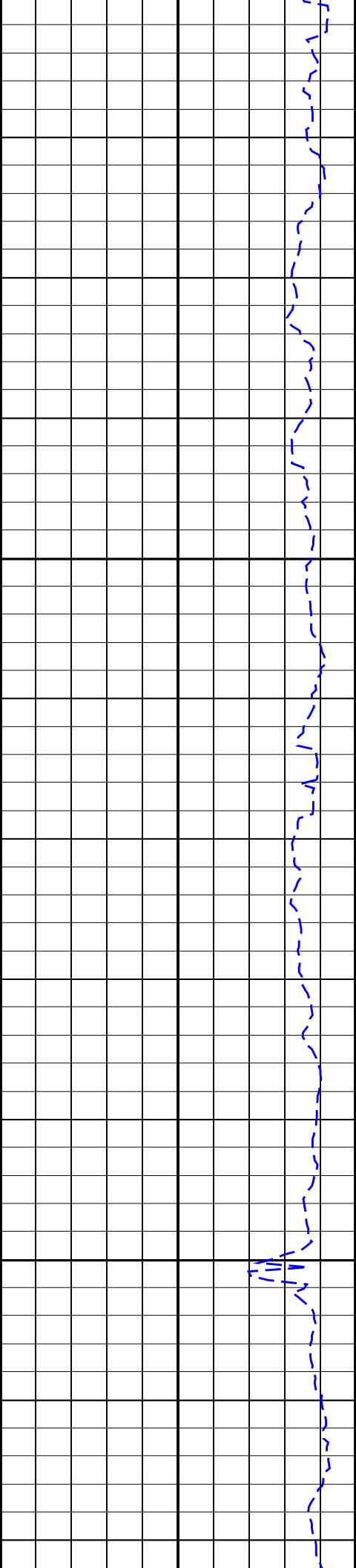
Bit Run Summary

| Run number | | 1 | 2 | 3 | 4 | 5 | | | | | |
|---------------------------|------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|--|--|--|
| Bit size | in. | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | | | | | |
| Bit start depth | m | 644.0 | 754.0 | 643.0 | 1459.0 | 1839.0 | | | | | |
| Bit end depth | m | 754.0 | 763.0 | 1459.0 | 1839.0 | 3248.0 | | | | | |
| Top interval logged | m | 644.0 | 734.4 | 643.0 | 1439.4 | 1819.4 | | | | | |
| Bottom interval logged | m | 734.4 | 743.4 | 1439.4 | 1819.4 | 3228.4 | | | | | |
| Begin log: time | | 00:00 | 08:35 | 07:10 | 15:23 | 06:50 | | | | | |
| Begin log: date | | 09-Aug-04 | 10-Aug-04 | 11-Aug-04 | 14-Aug-04 | 17-Aug-04 | | | | | |
| End log: time | | 18:56 | 09:00 | 04:30 | 18:00 | 05:10 | | | | | |
| End log: date | | 09-Aug-04 | 10Aug-04 | 14-Aug-04 | 15-Aug-04 | 23-Aug-04 | | | | | |
| Mud data | | | | | | | | | | | |
| Depth | m | 754.0 | 754.0 | 1410.0 | 1838.0 | 3164.0 | | | | | |
| Type | | KCI/PHPA/Glycol | KCI/PHPA/Glycol | KCI/PHPA/Glycol | KCI/PHPA/Glycol | KCI/PHPA/Glycol | | | | | |
| Mud weight | ppg | 9.2 | 9.2 | 9.9 | 10.0 | 9.7 | | | | | |
| Solids | % | 3.0 | 3.0 | 7.9 | 8.3 | 6.6 | | | | | |
| Chlorides | mg/L | 36,000 | 36,000 | 42,000 | 42,000 | 43,500 | | | | | |
| Rm | | | | | | | | | | | |
| Rmf | | | | | | | | | | | |
| Rmc | | | | | | | | | | | |
| Potassium | % | 4.1 | 4.1 | 4.2 | 4.2 | 4.1 | | | | | |
| Environmental data | | | | | | | | | | | |
| GR | | | | | | | | | | | |
| Mud weight | ppg | 9.2 | 9.2 | 9.9 | 10.0 | 9.7 | | | | | |
| Bit size | in. | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | | | | | |
| Resistivity | | | | | | | | | | | |
| Neutron porosity | | | | | | | | | | | |
| Hole Size | | | | | | | | | | | |
| Mud weight | | | | | | | | | | | |
| Temperature | | | | | | | | | | | |
| Mud salinity | | | | | | | | | | | |
| Formation salinity | | | | | | | | | | | |
| Recording rate 1 | SEC | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | | | | | |
| Recording rate 2 | SEC | | | | | | | | | | |
| Filtering GR | | 3 pt. | 3 pt. | 3 pt. | 3 pt. | 3 pt. | | | | | |
| Filtering density | | | | | | | | | | | |
| Filtering Neutron | | | | | | | | | | | |
| Company representative | | R. Bain | B. Davis | | | | | | | | |
| Anadrill personnel | | J. Dolan | R. Borjas | C. Soper | D. Hay | L. Johnston | | | | | |

MLA-A10A RT 200TVD

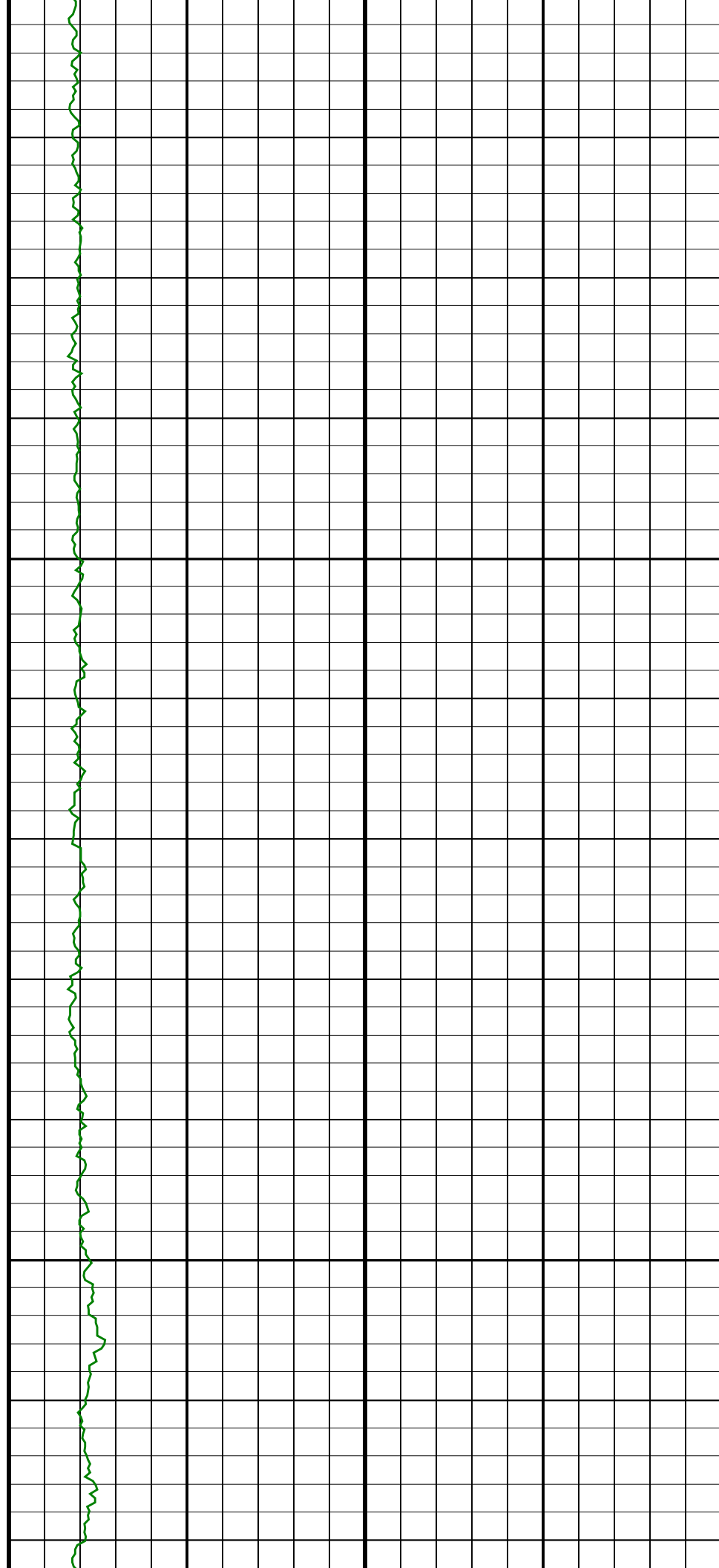
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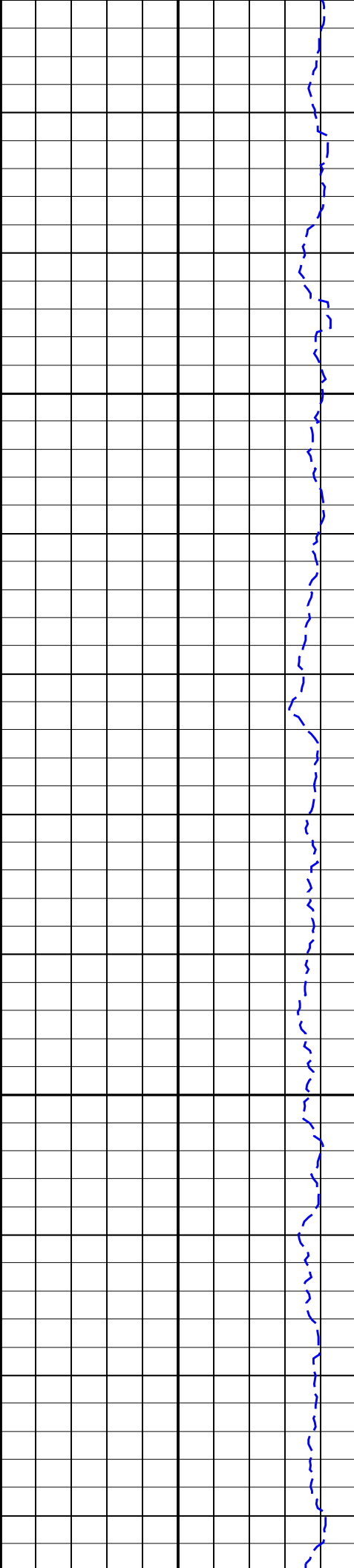




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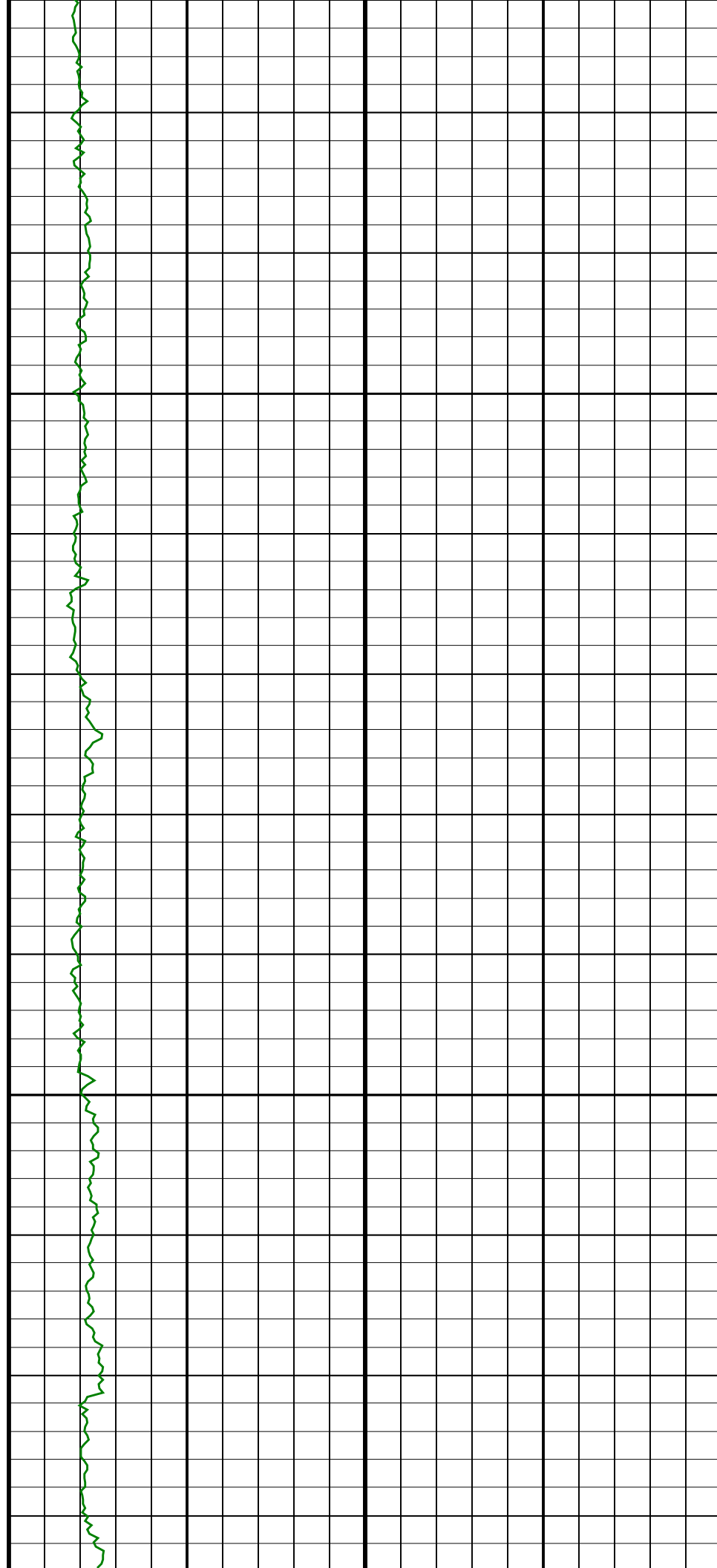
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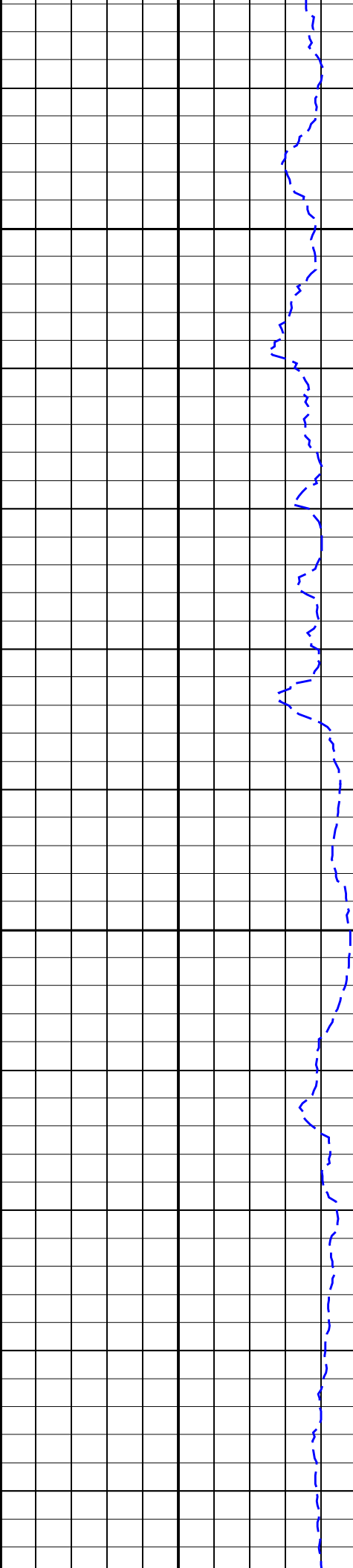


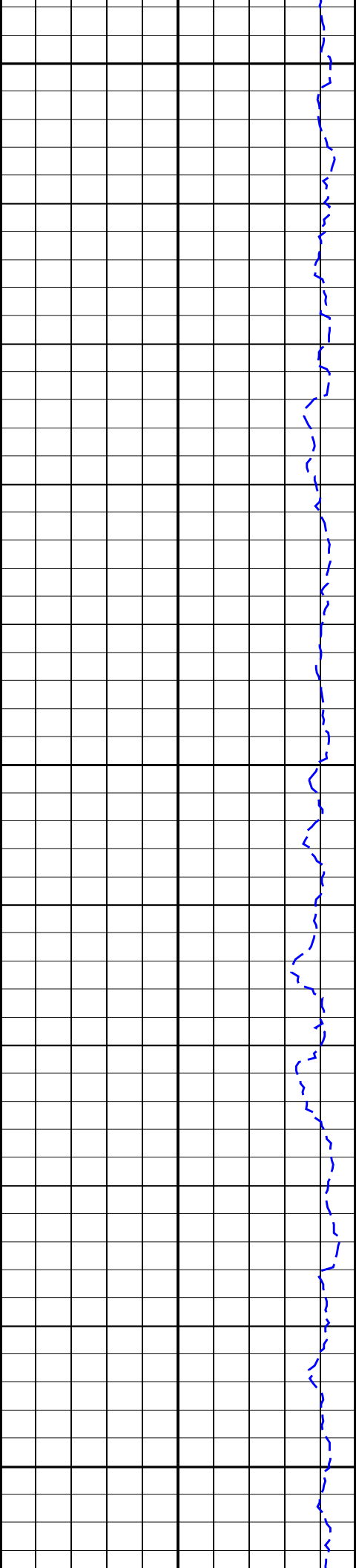


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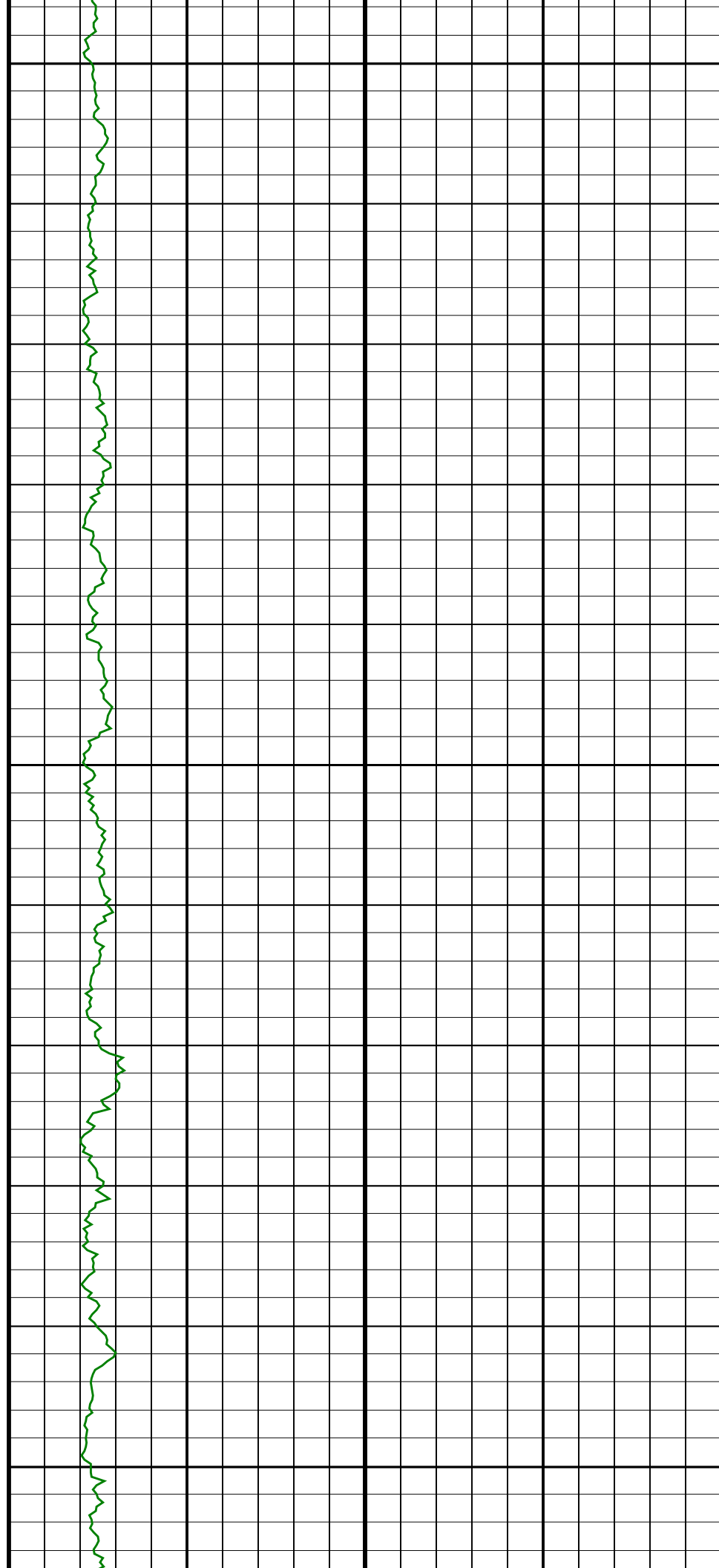


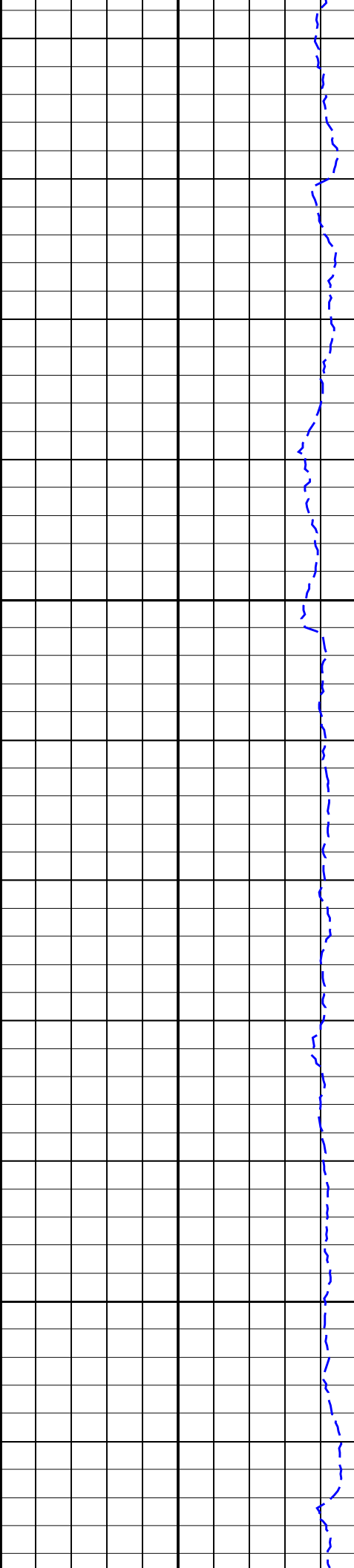


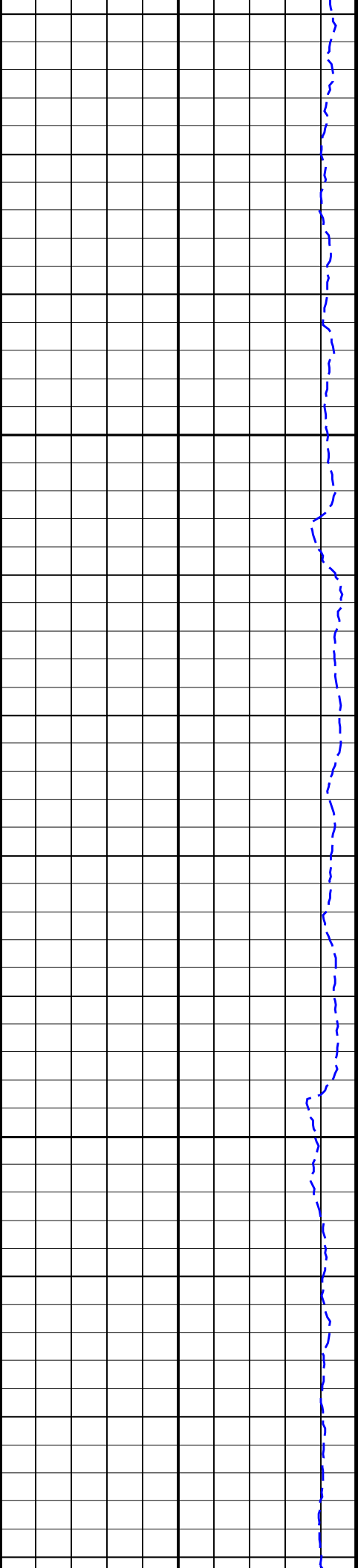
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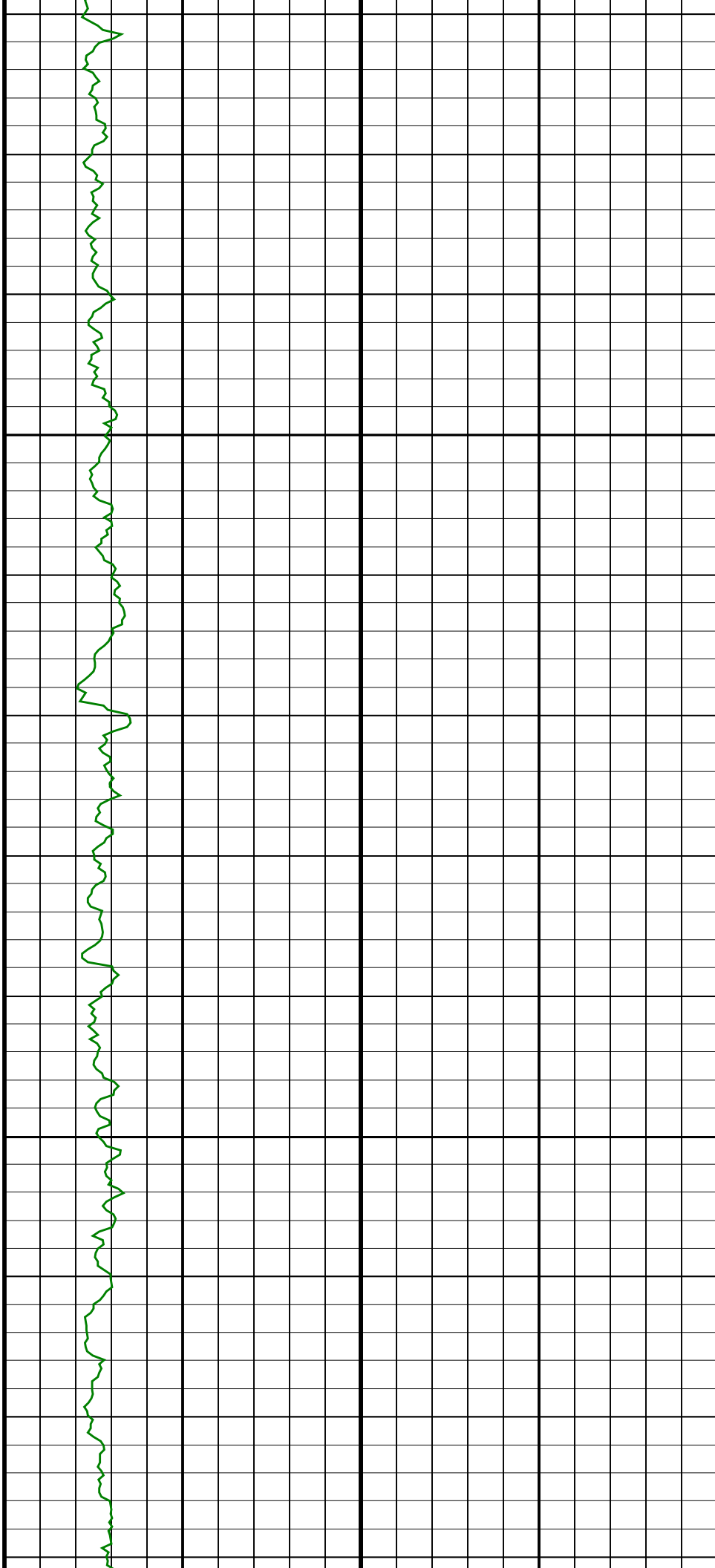


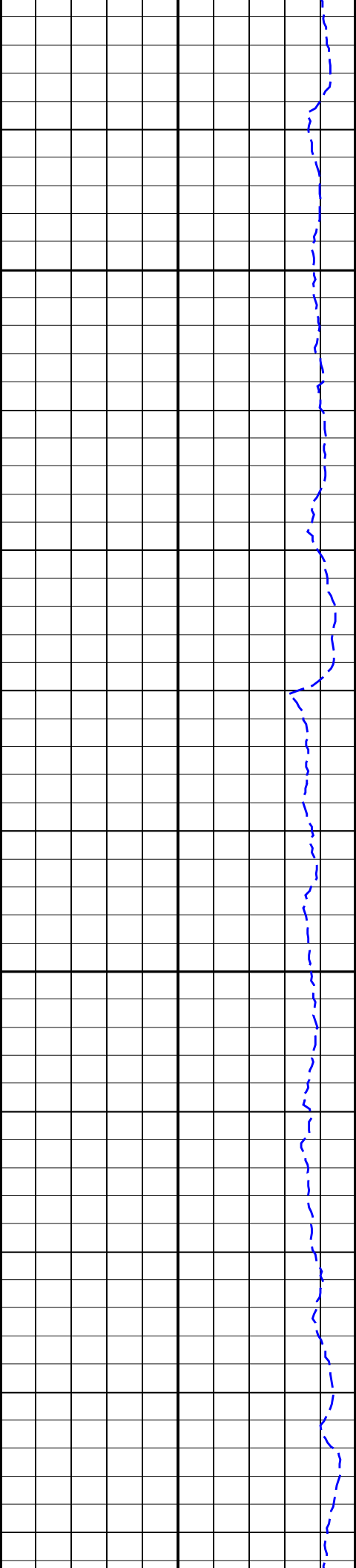




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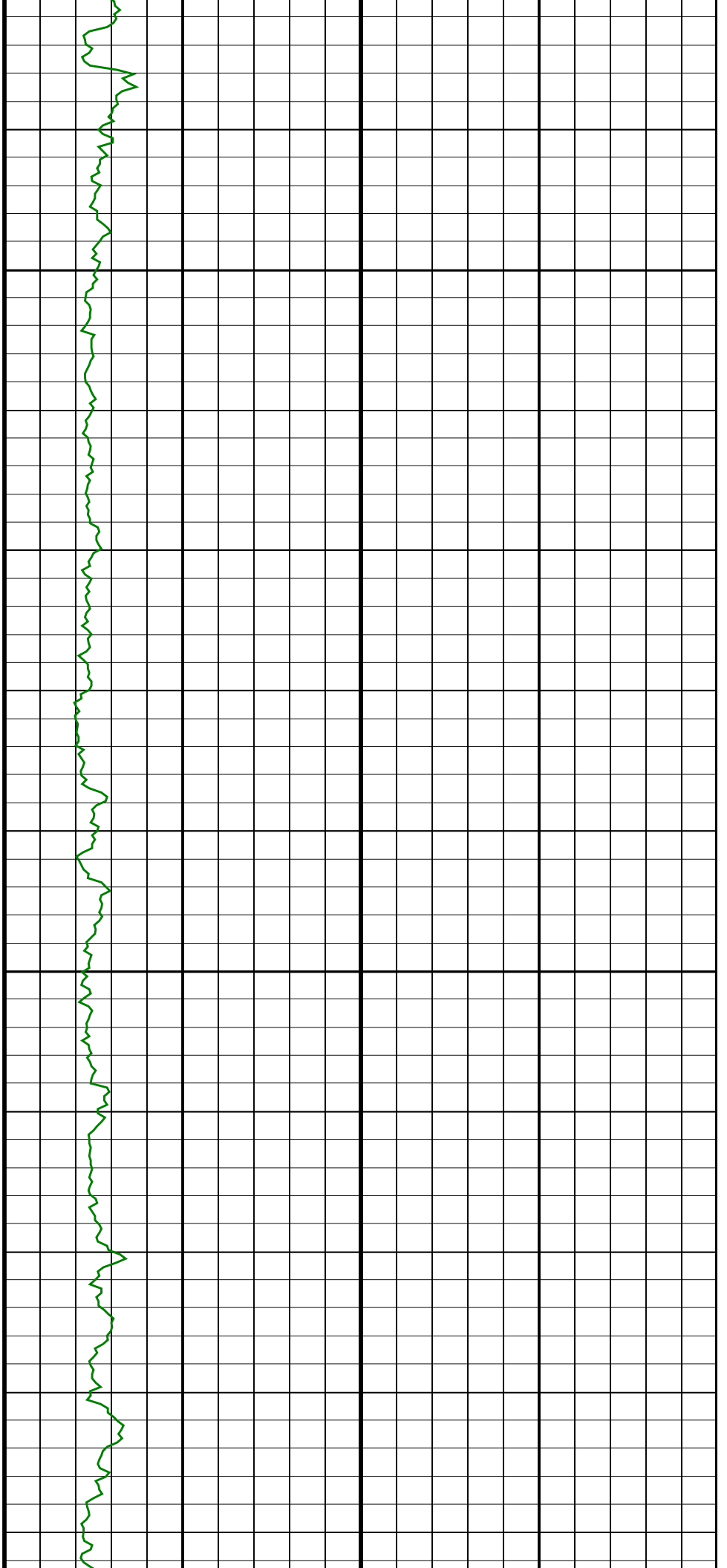
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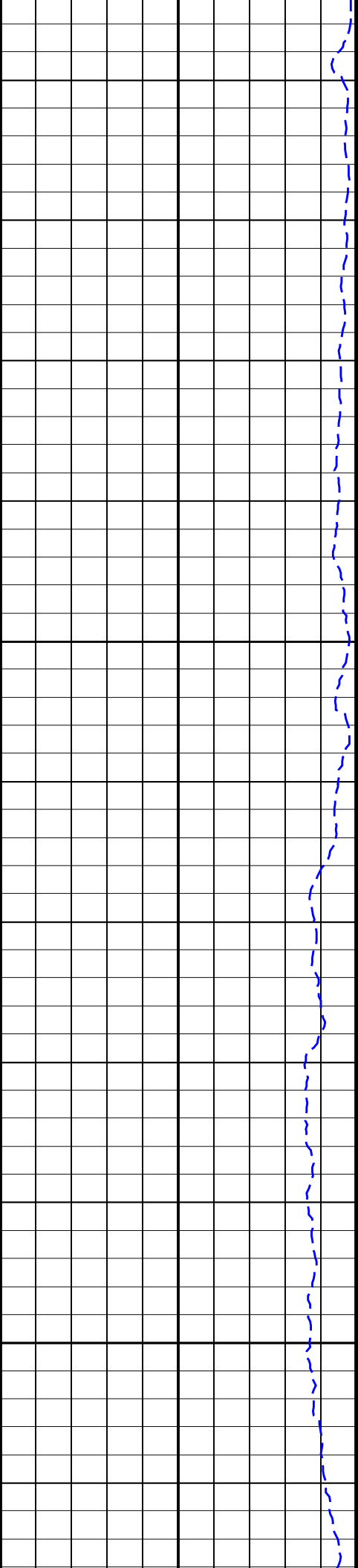




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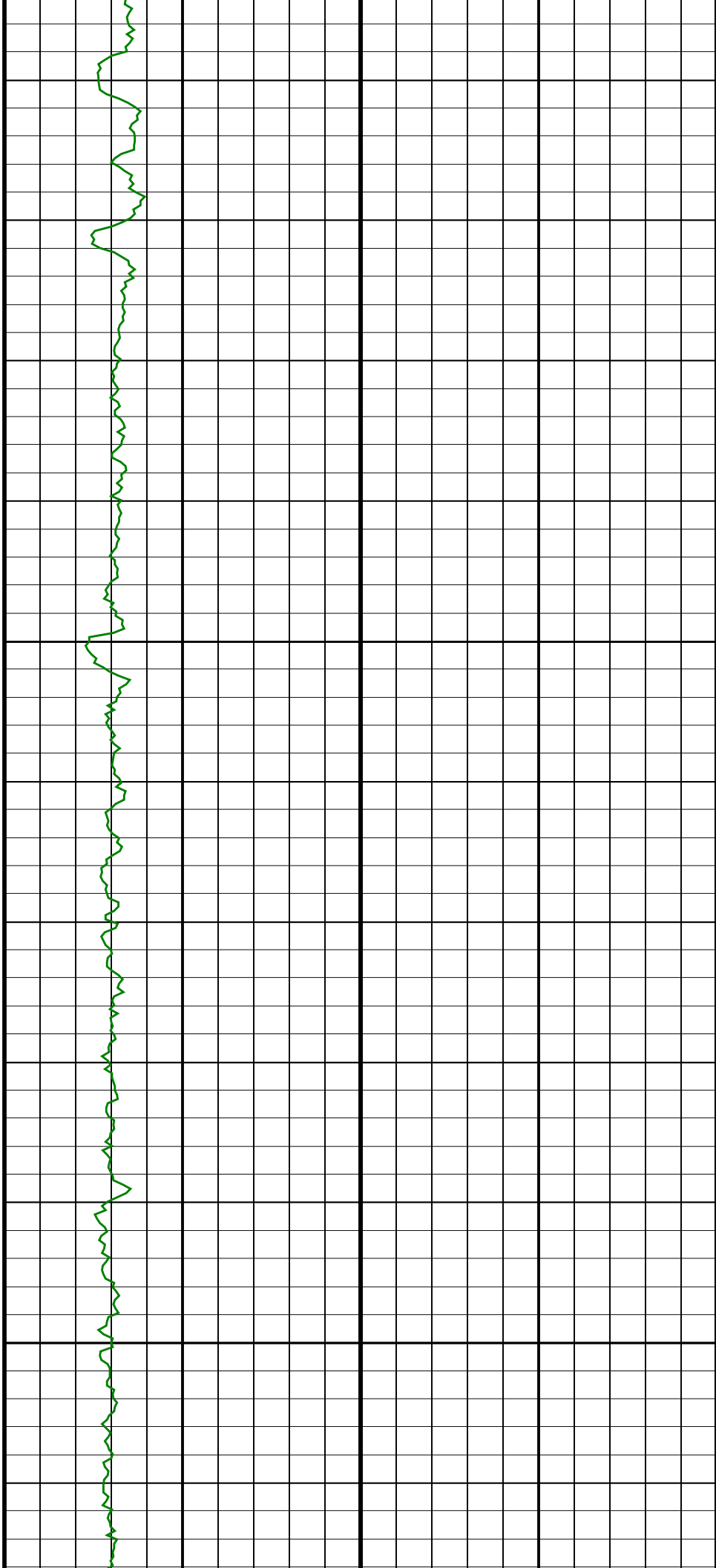
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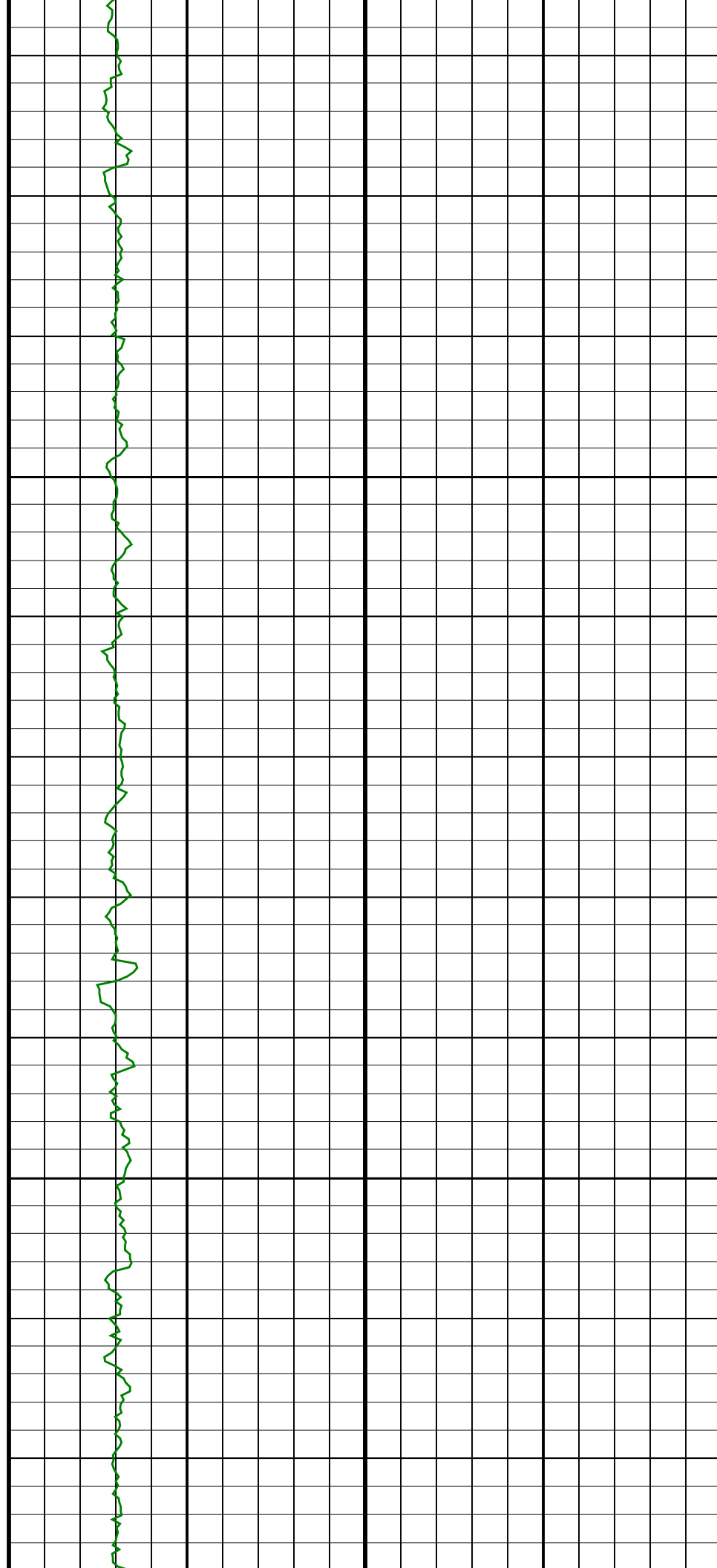
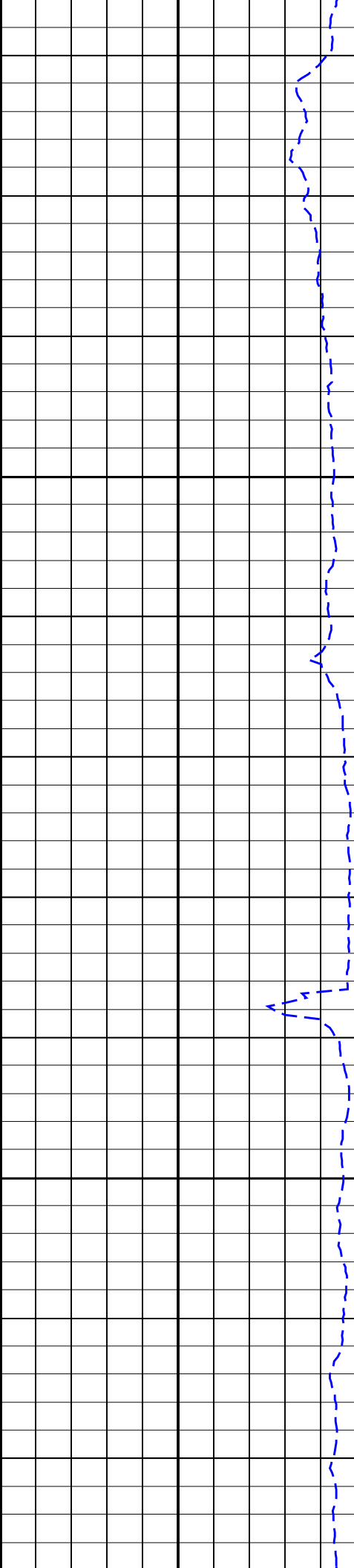


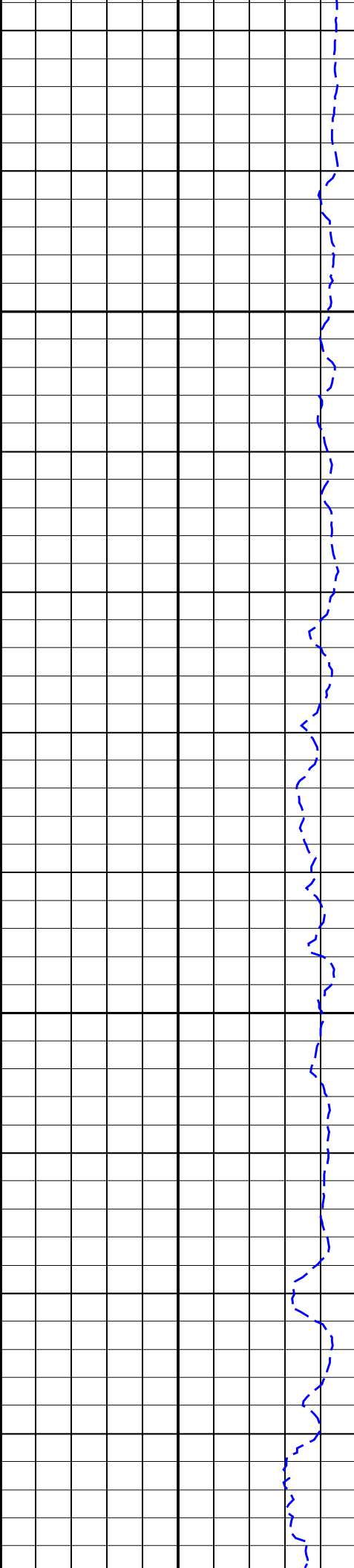


1150
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1175
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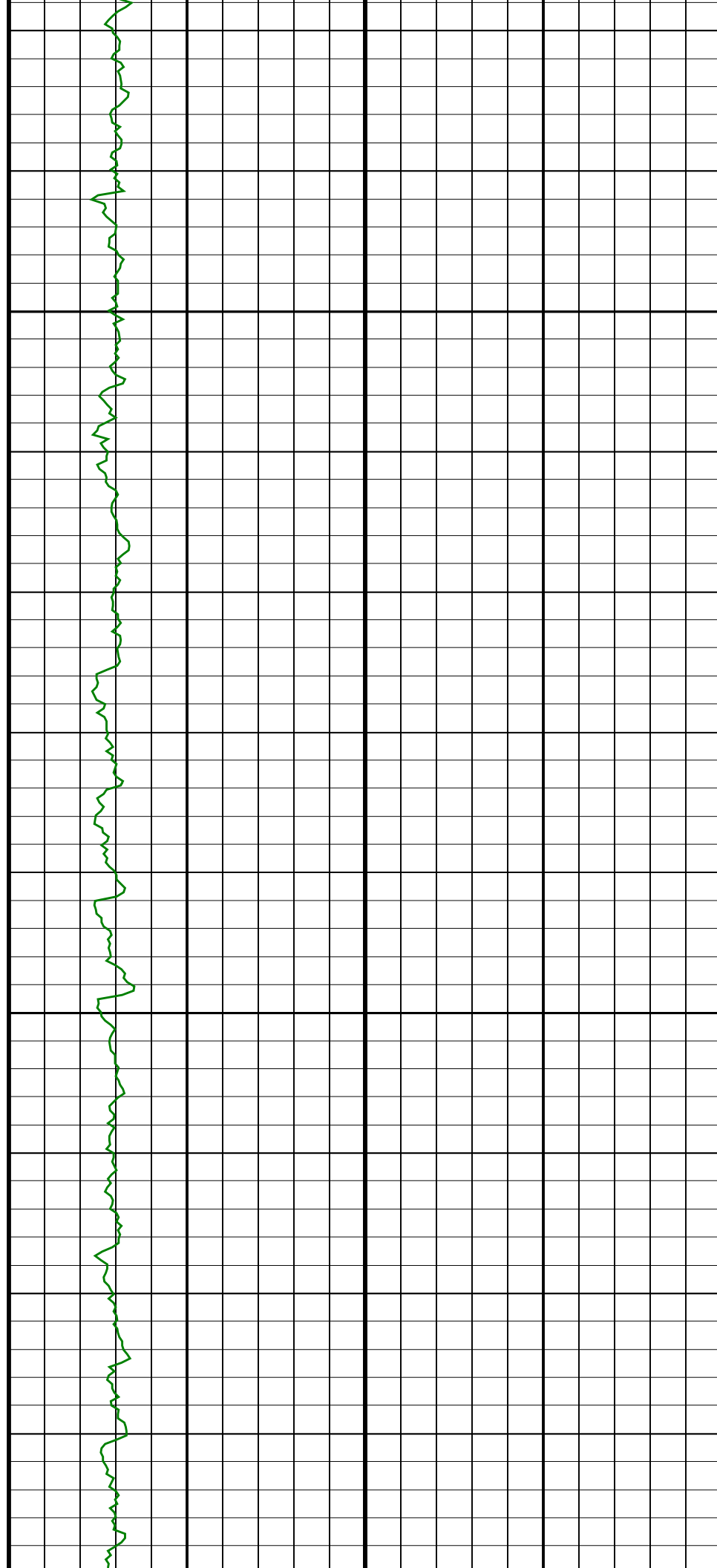


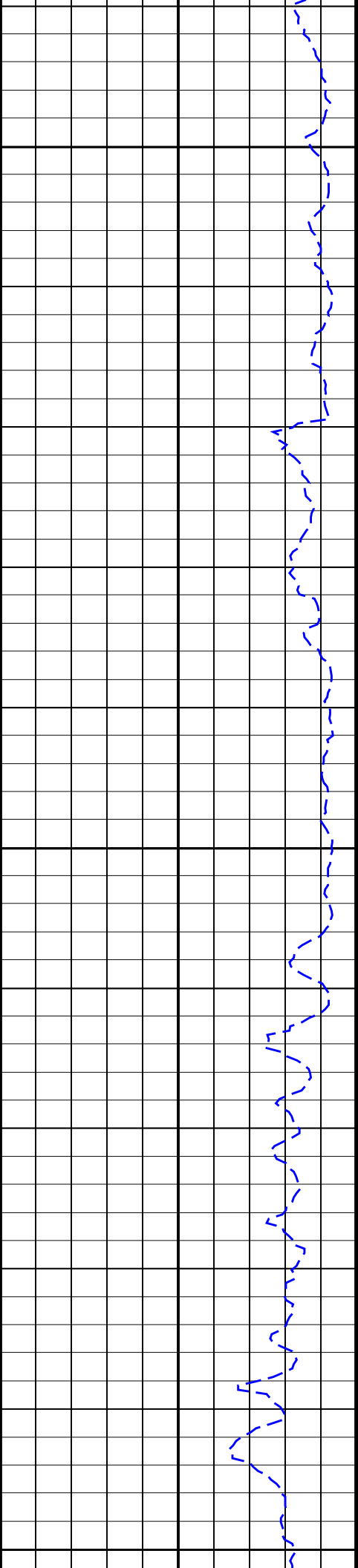




1250
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1275
TVD

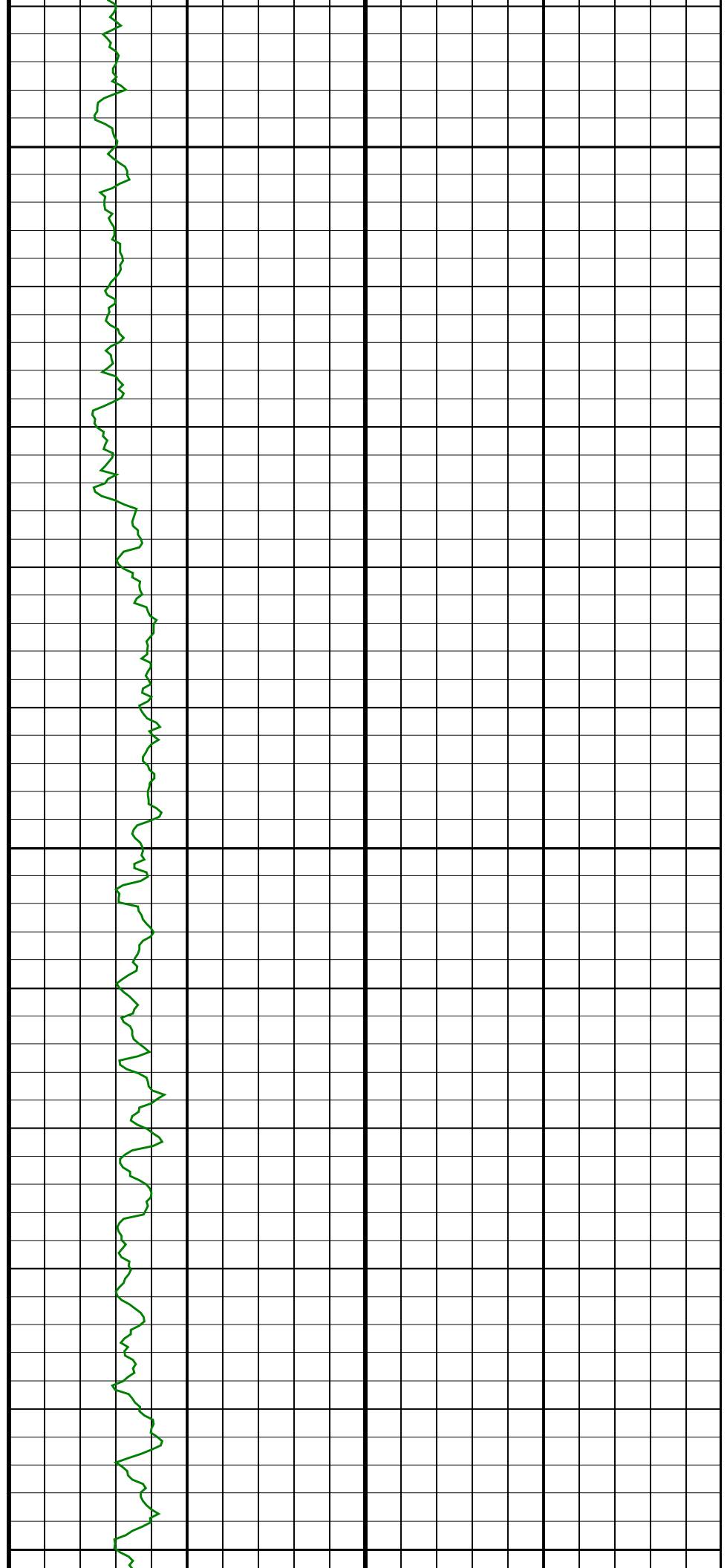


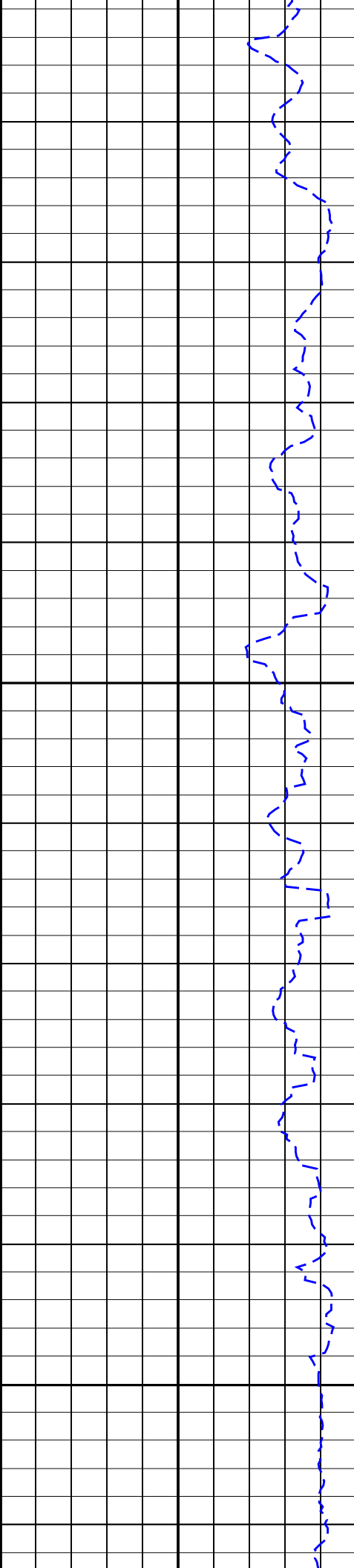


1300
TVD

1325
TVD

1350

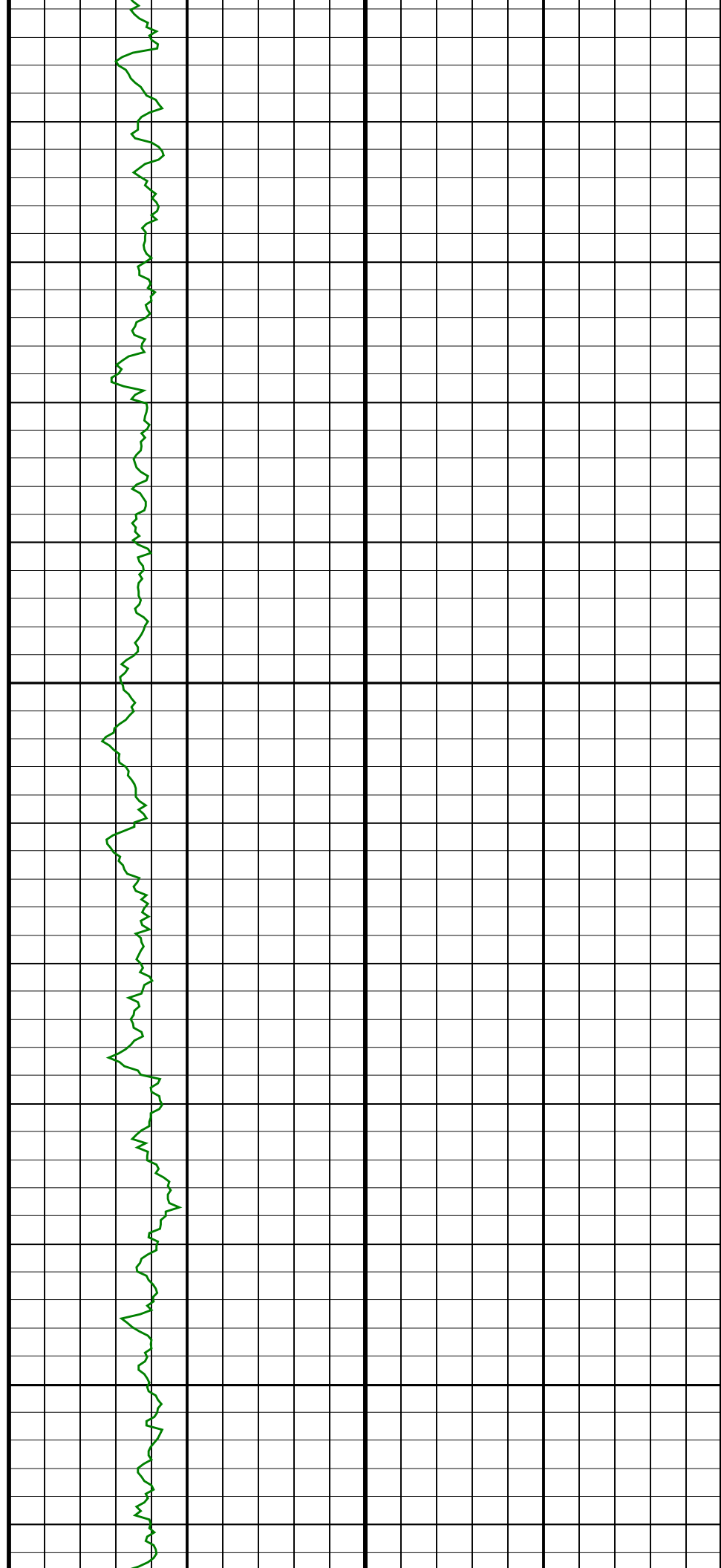


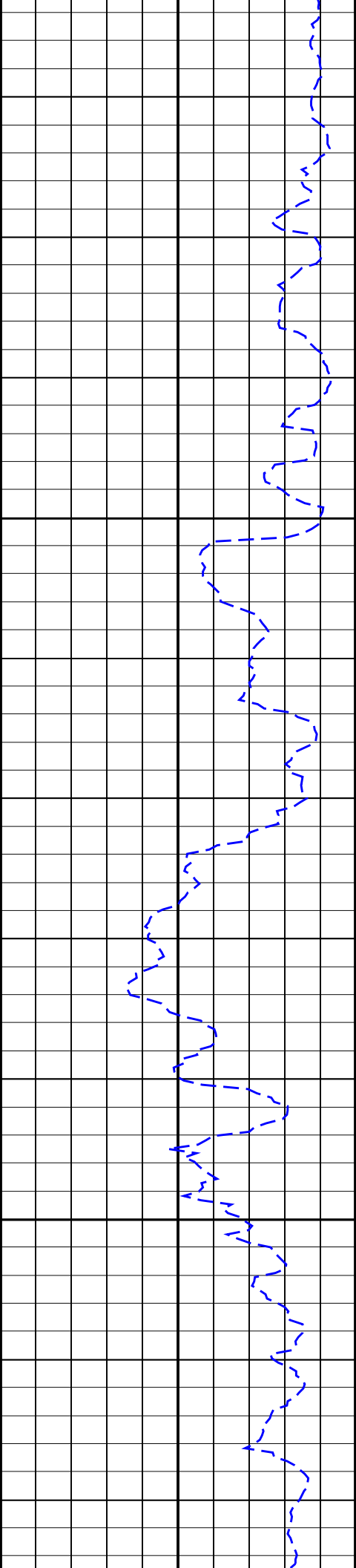


TVD

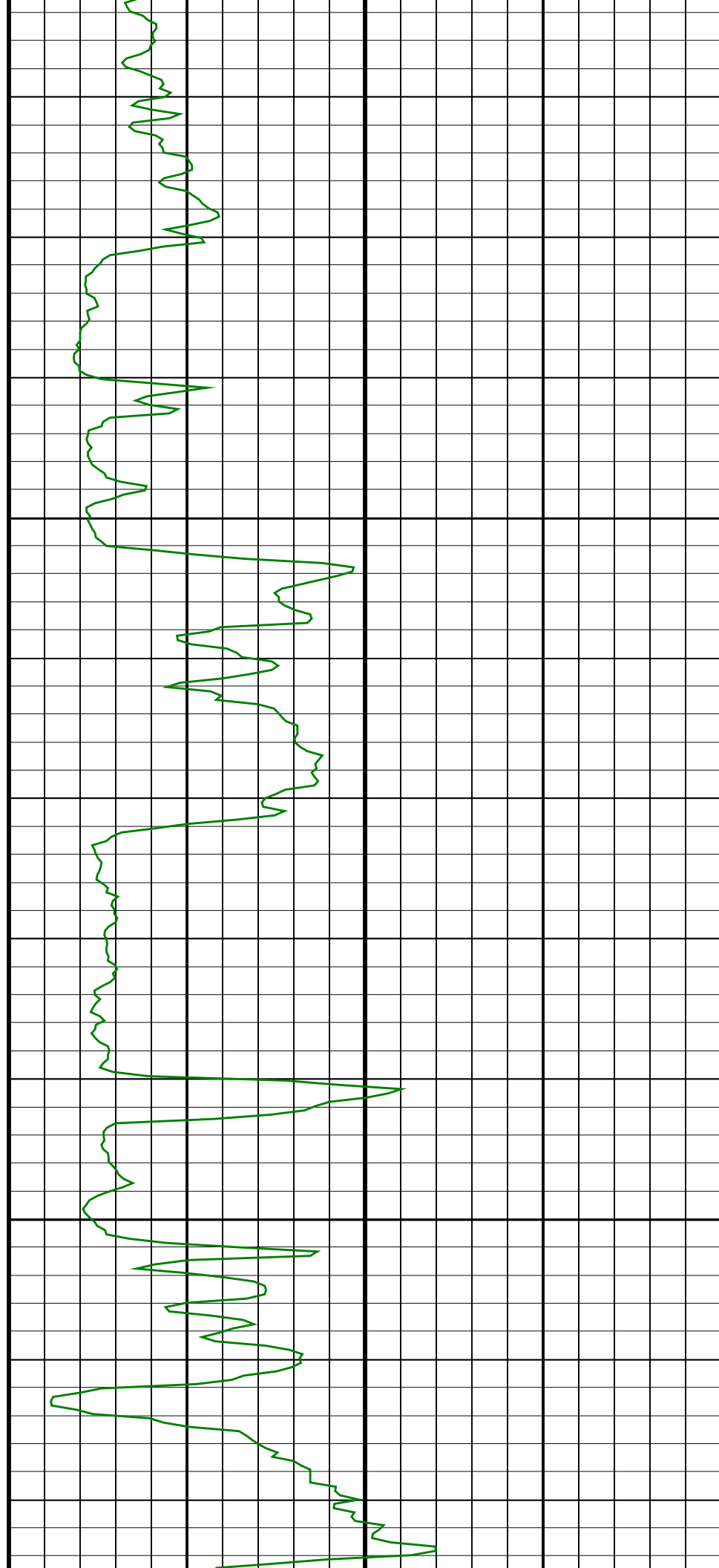
1375
TVD

1400
TVD

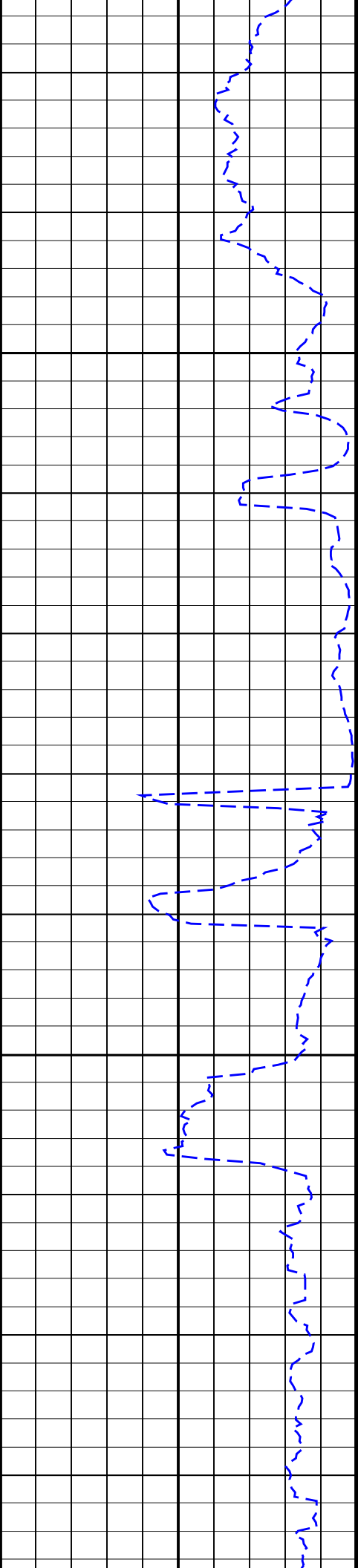




1425
TVD

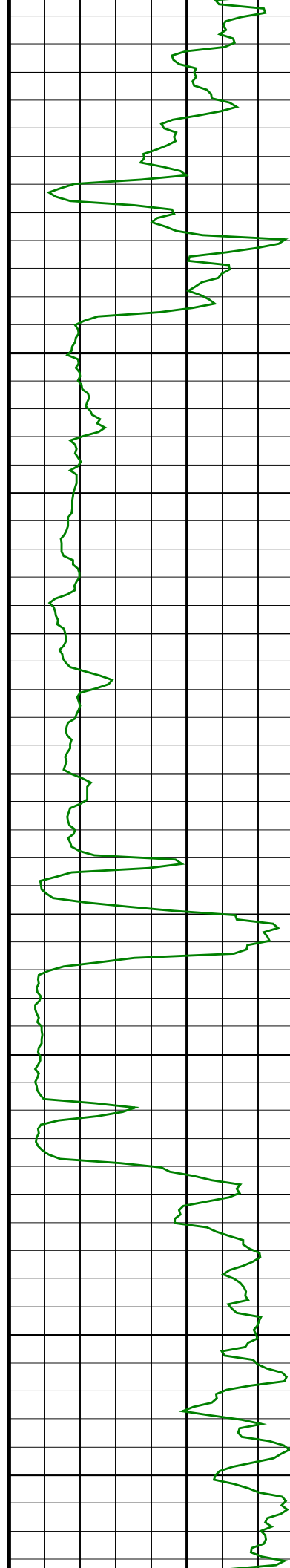


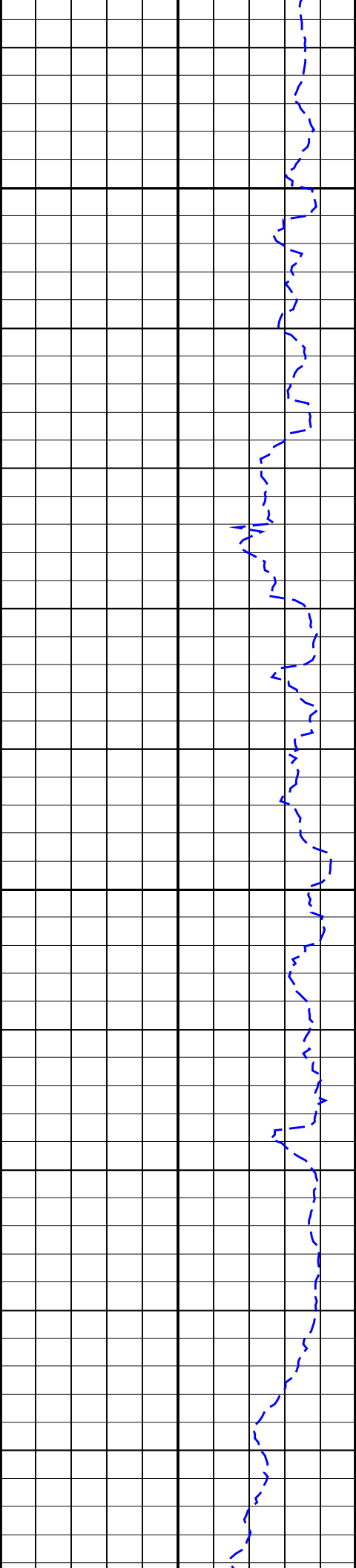
1450
TVD



1475
TVD

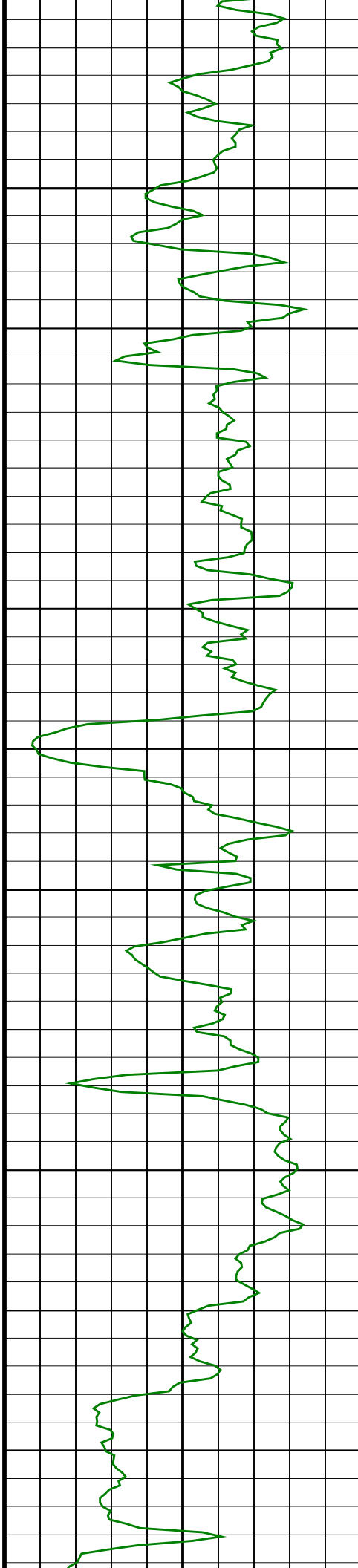
1500
TVD

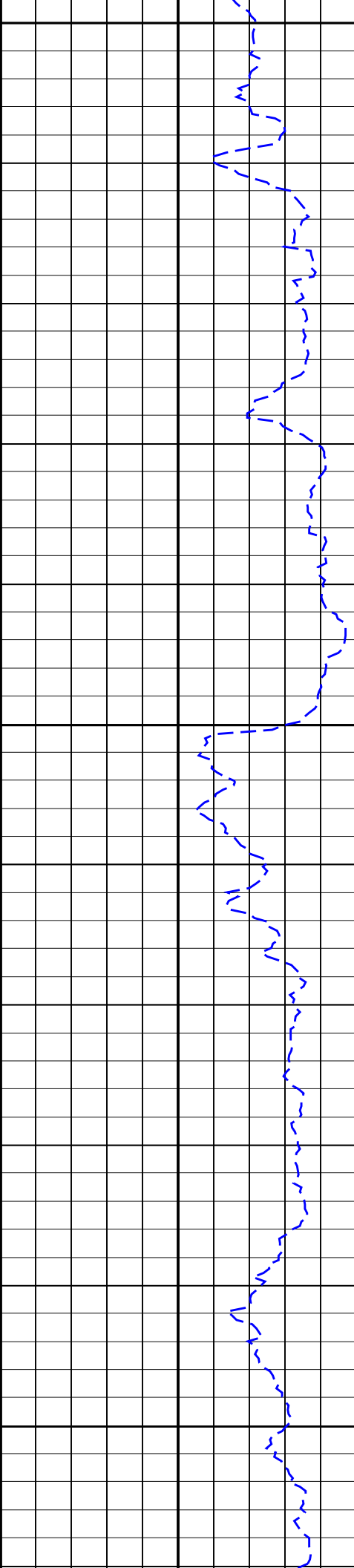




1525
TVD

1550
TVD

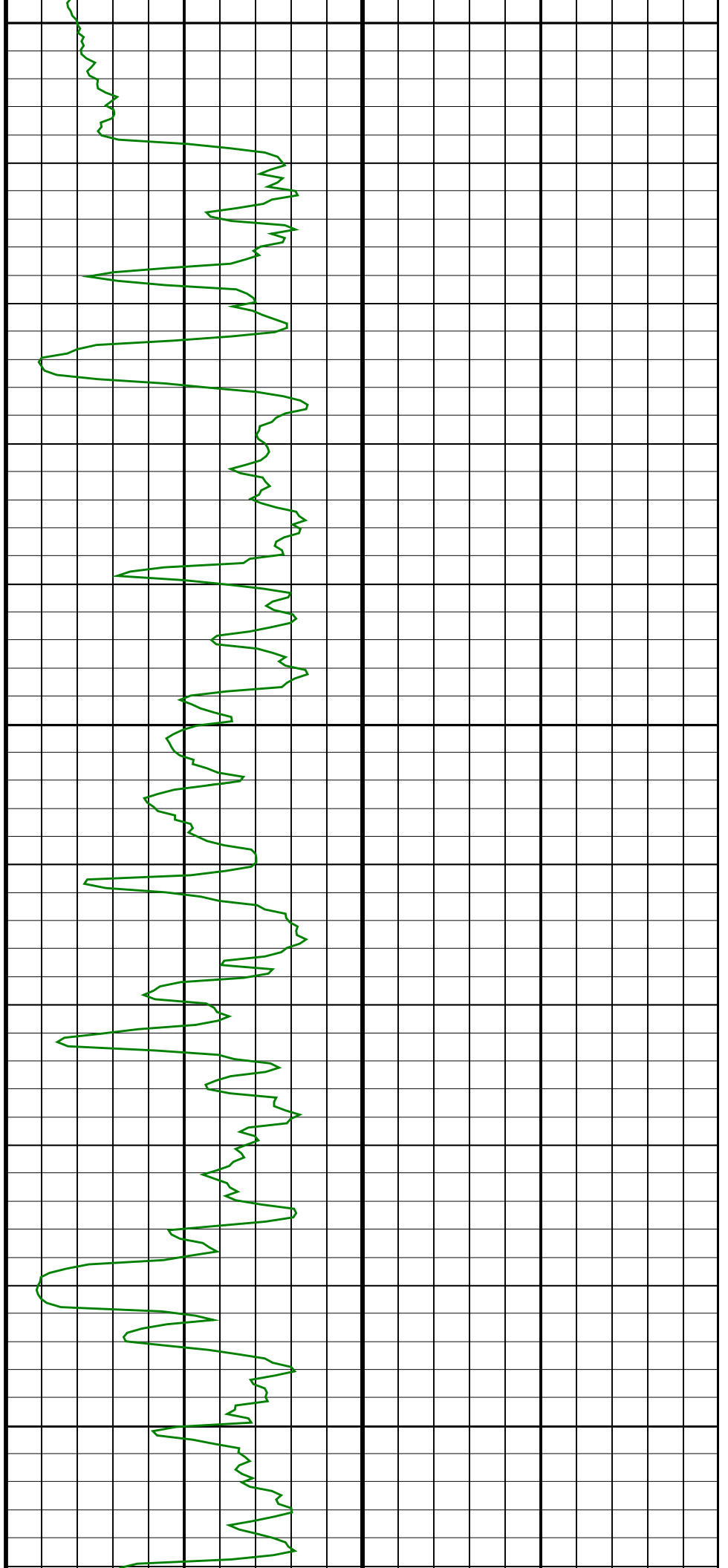


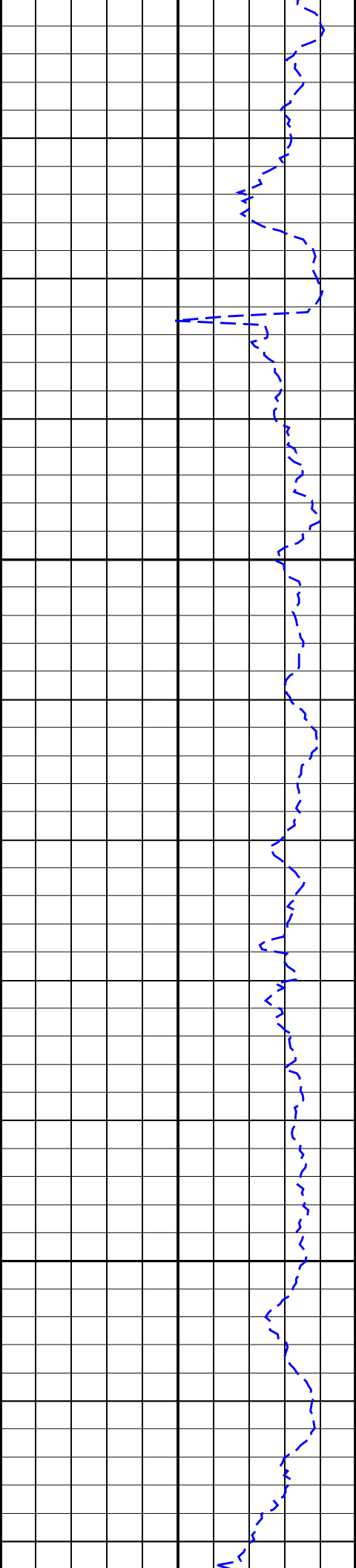


1575
TVD

1600
TVD

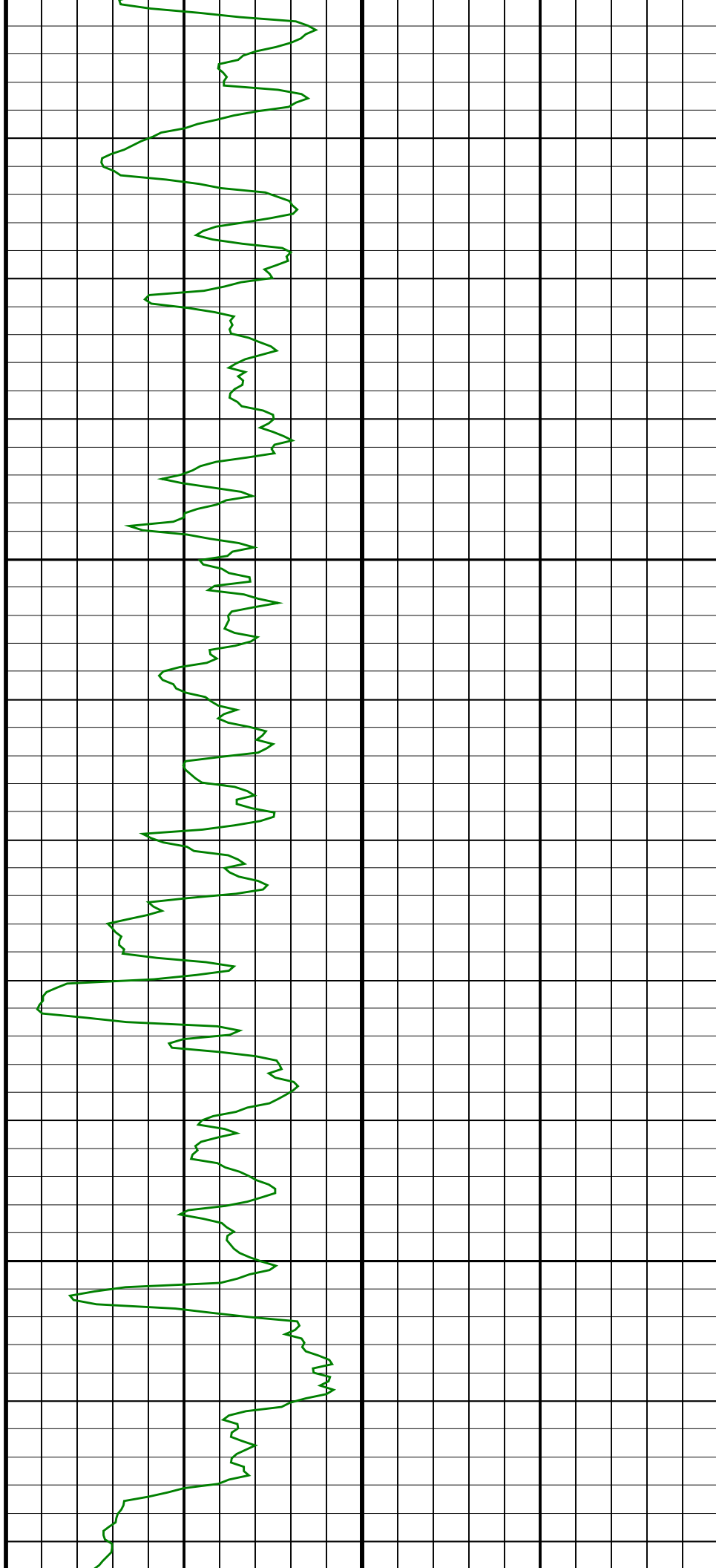
1625
TVD

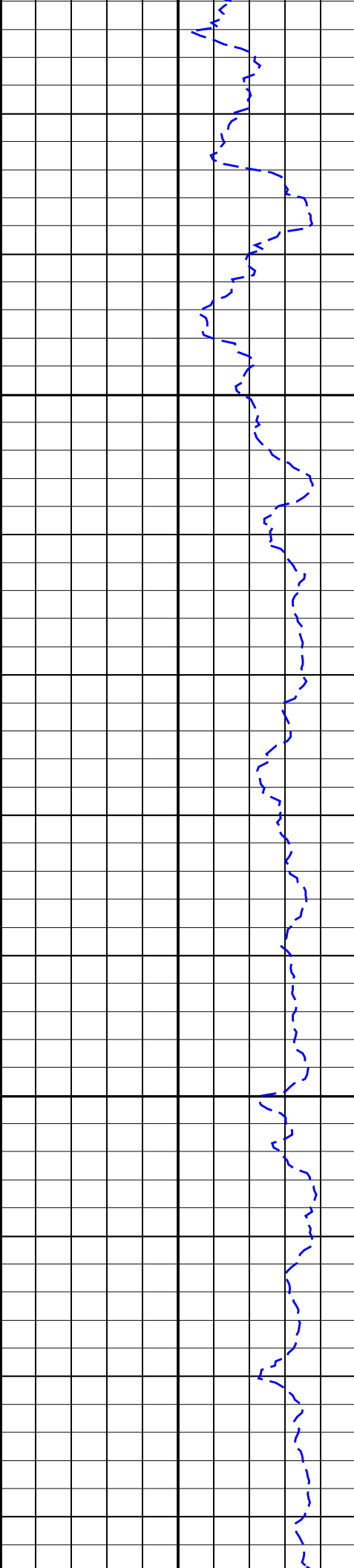




1650
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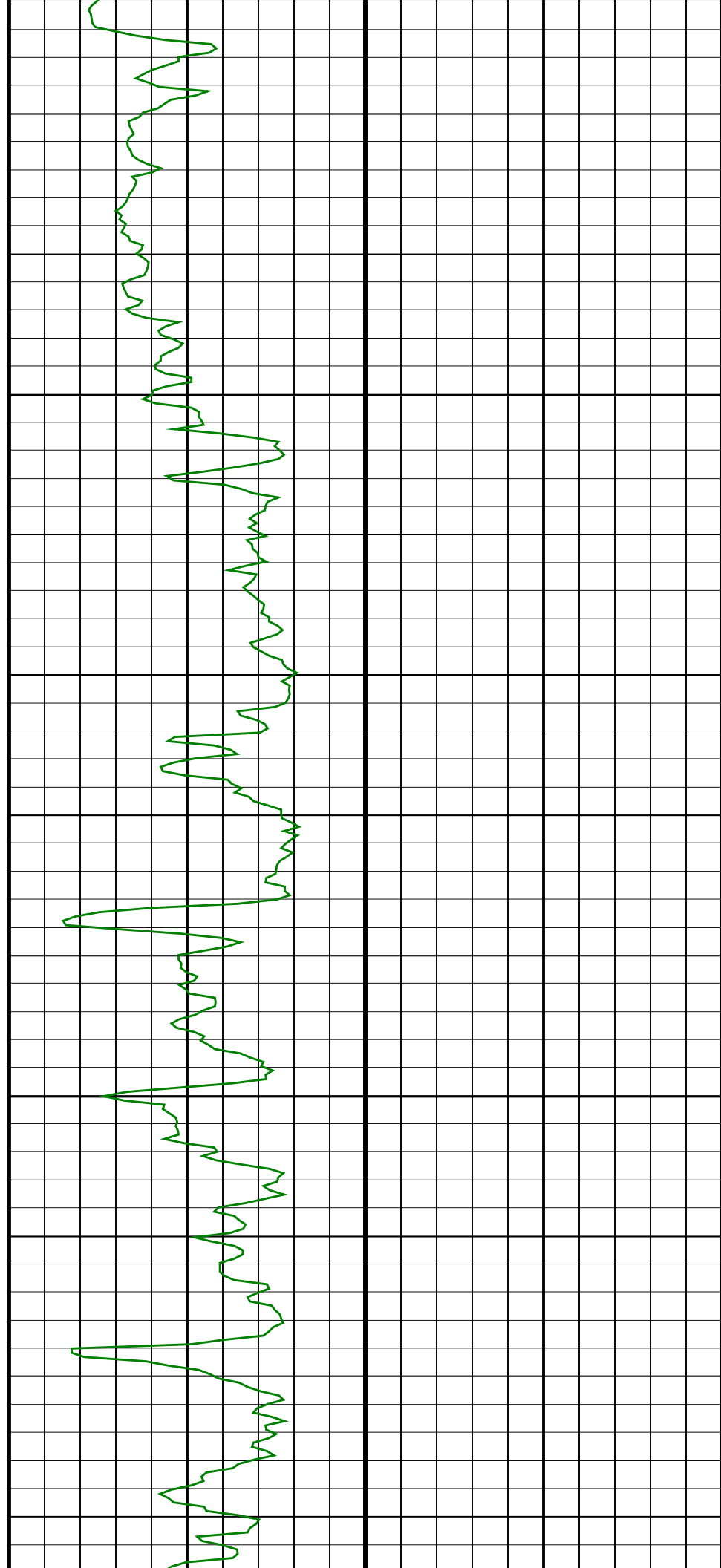
1675
TVD

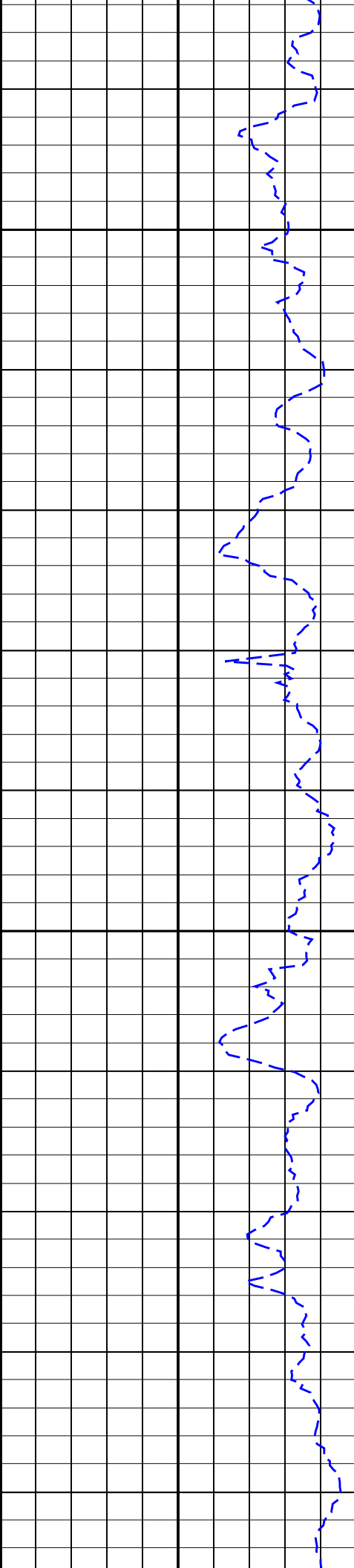




1700
TVD

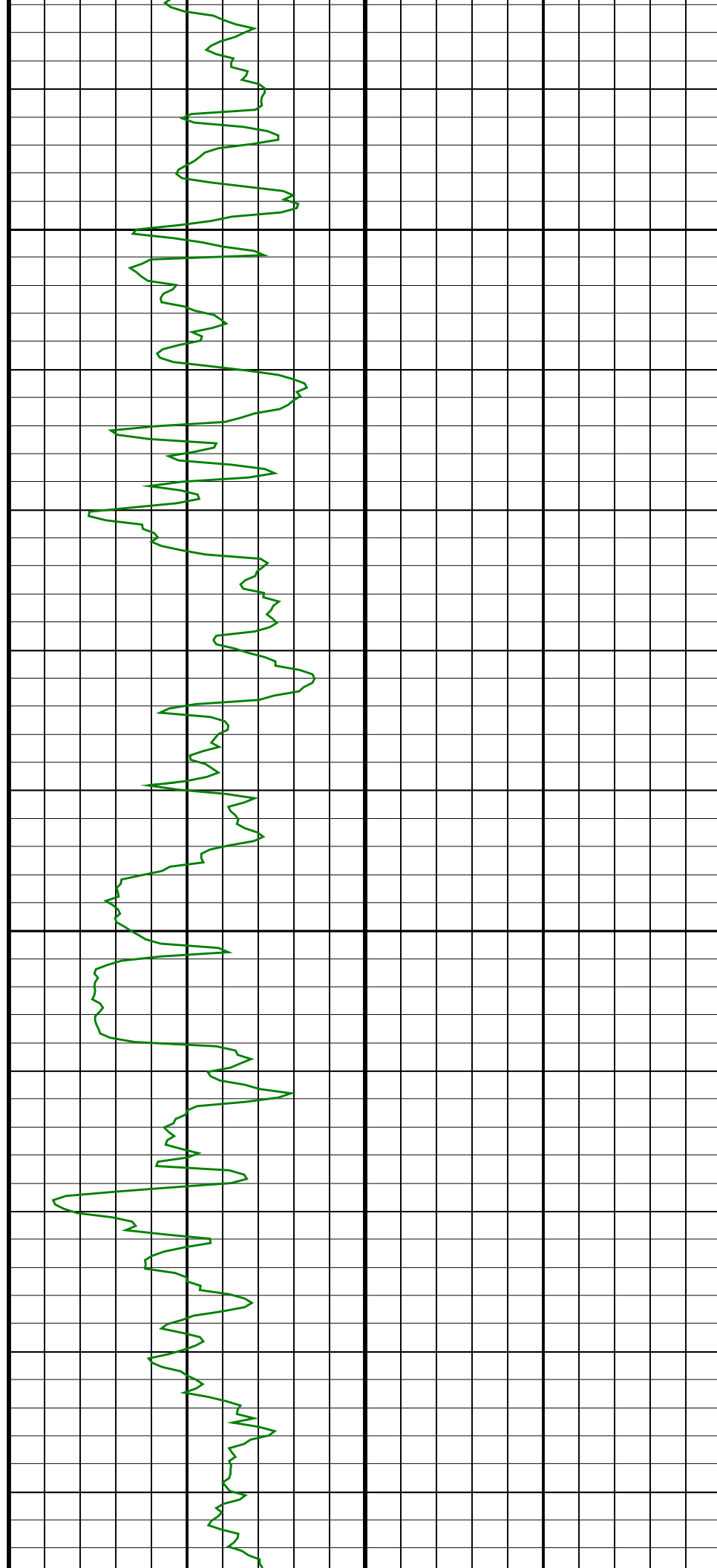
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TVD

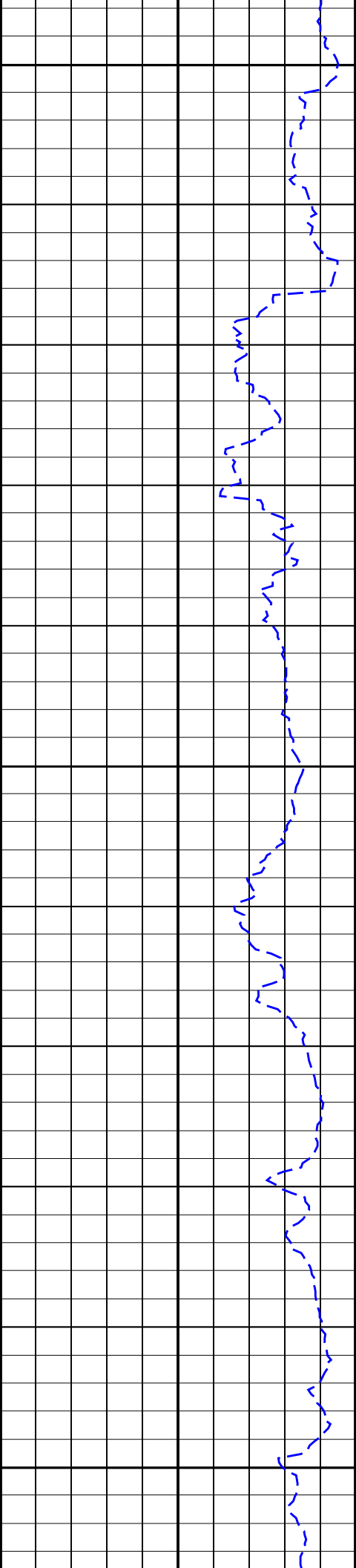




1750
TVD

1775
TVD

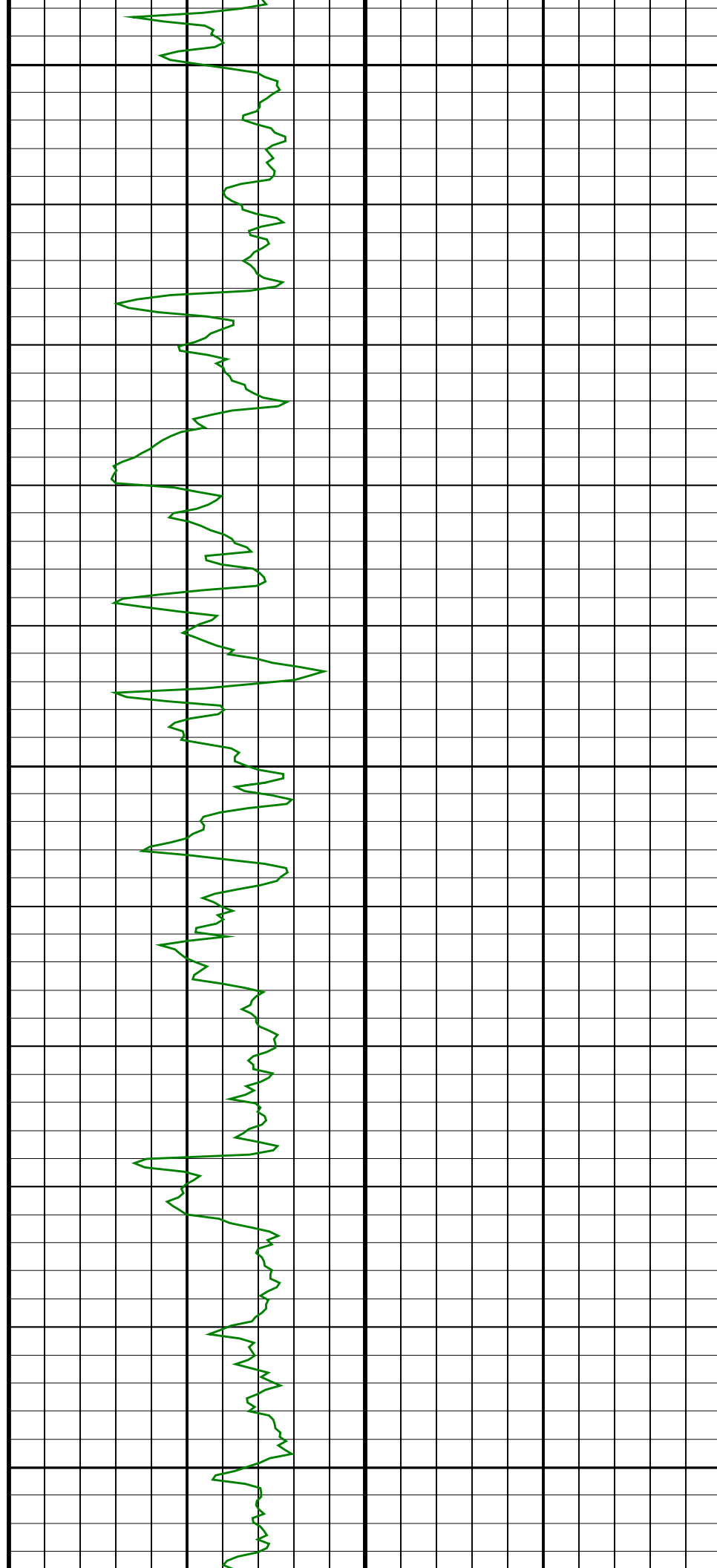


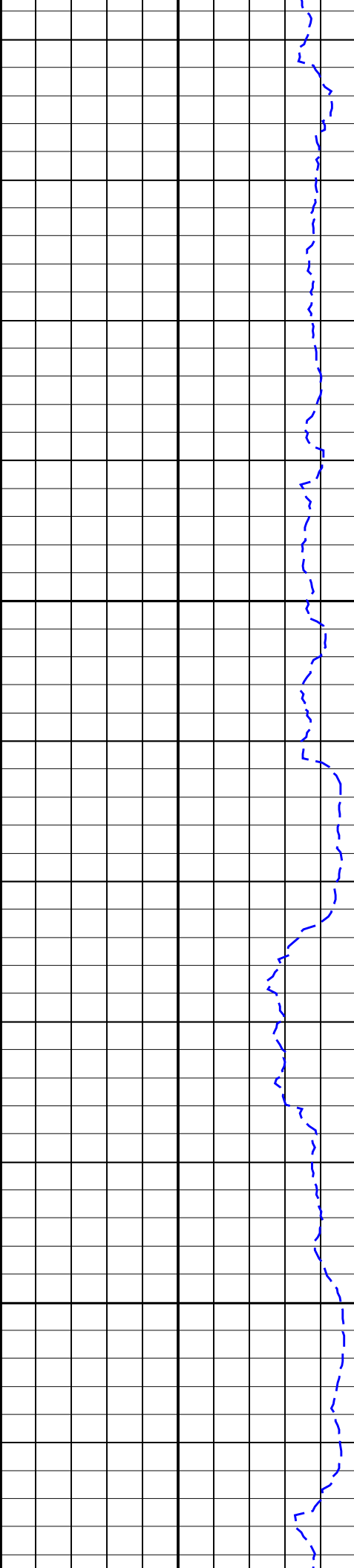


1800
TVD

1825
TVD

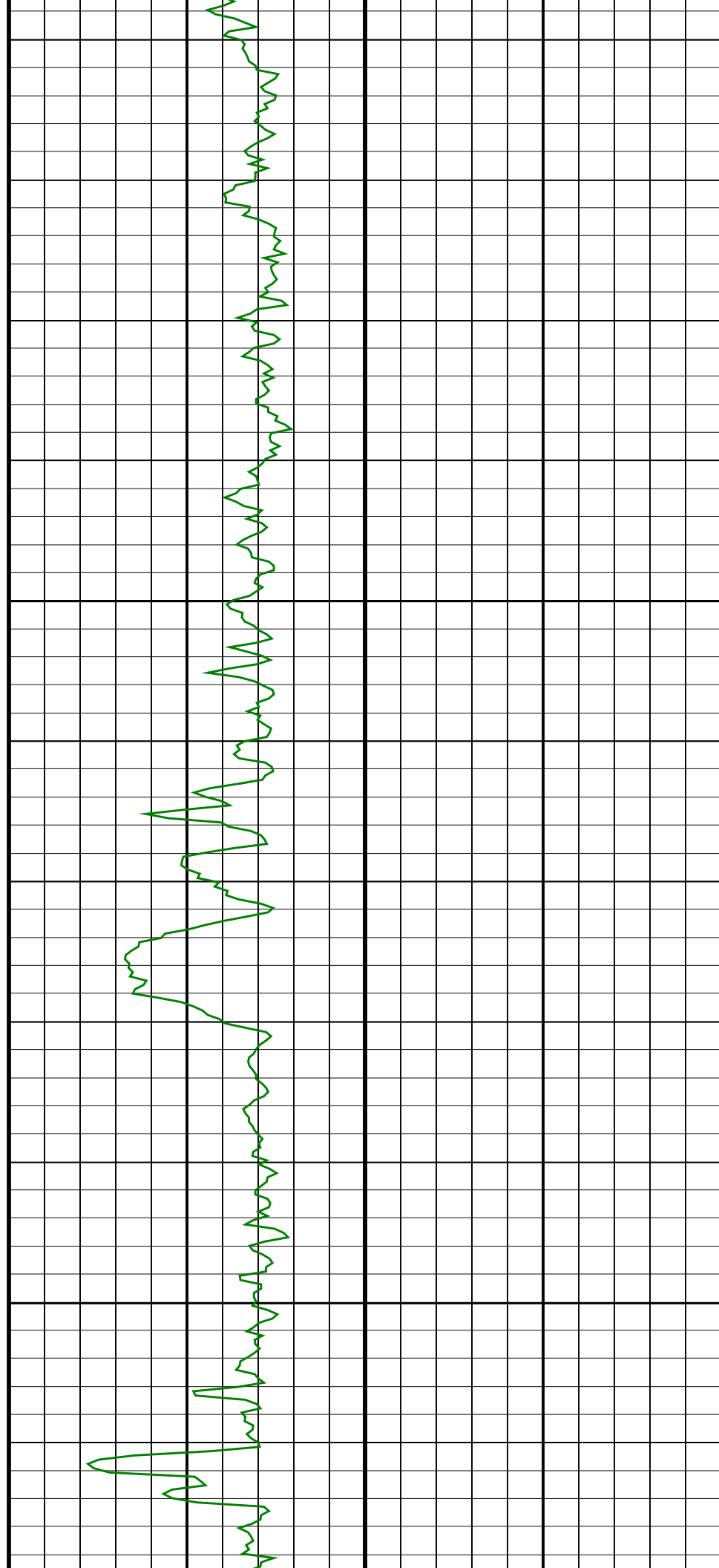
1850
TVD

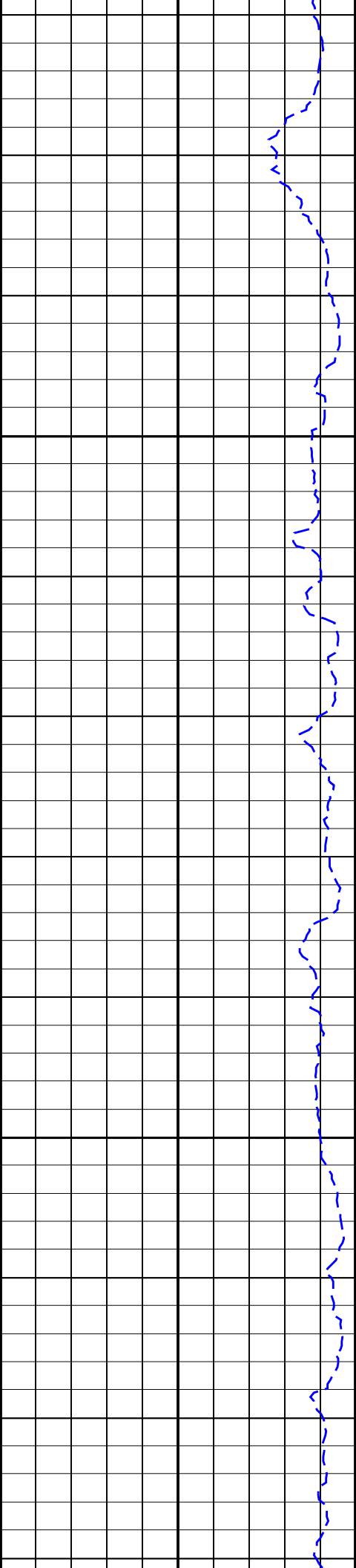




1875
TVD

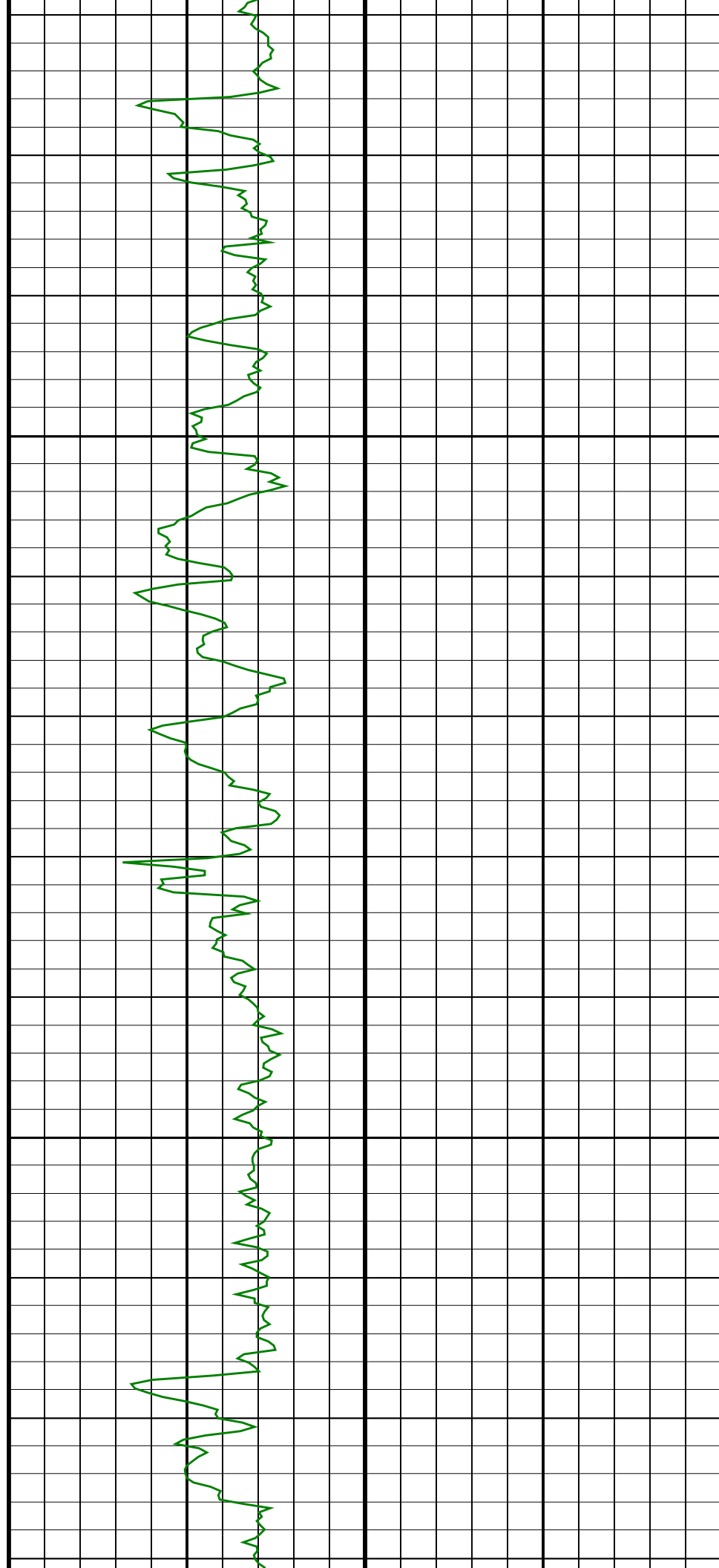
1900
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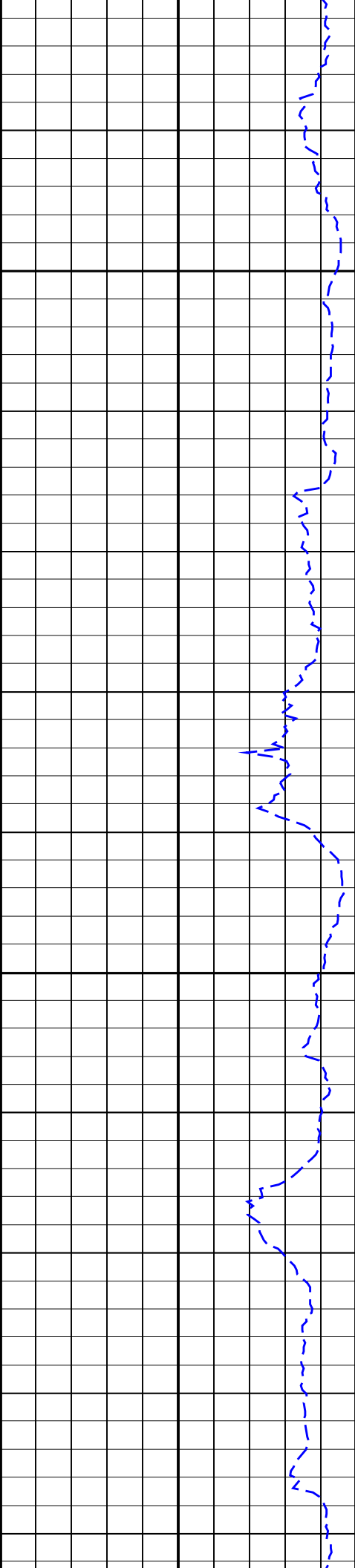




1925
TVD

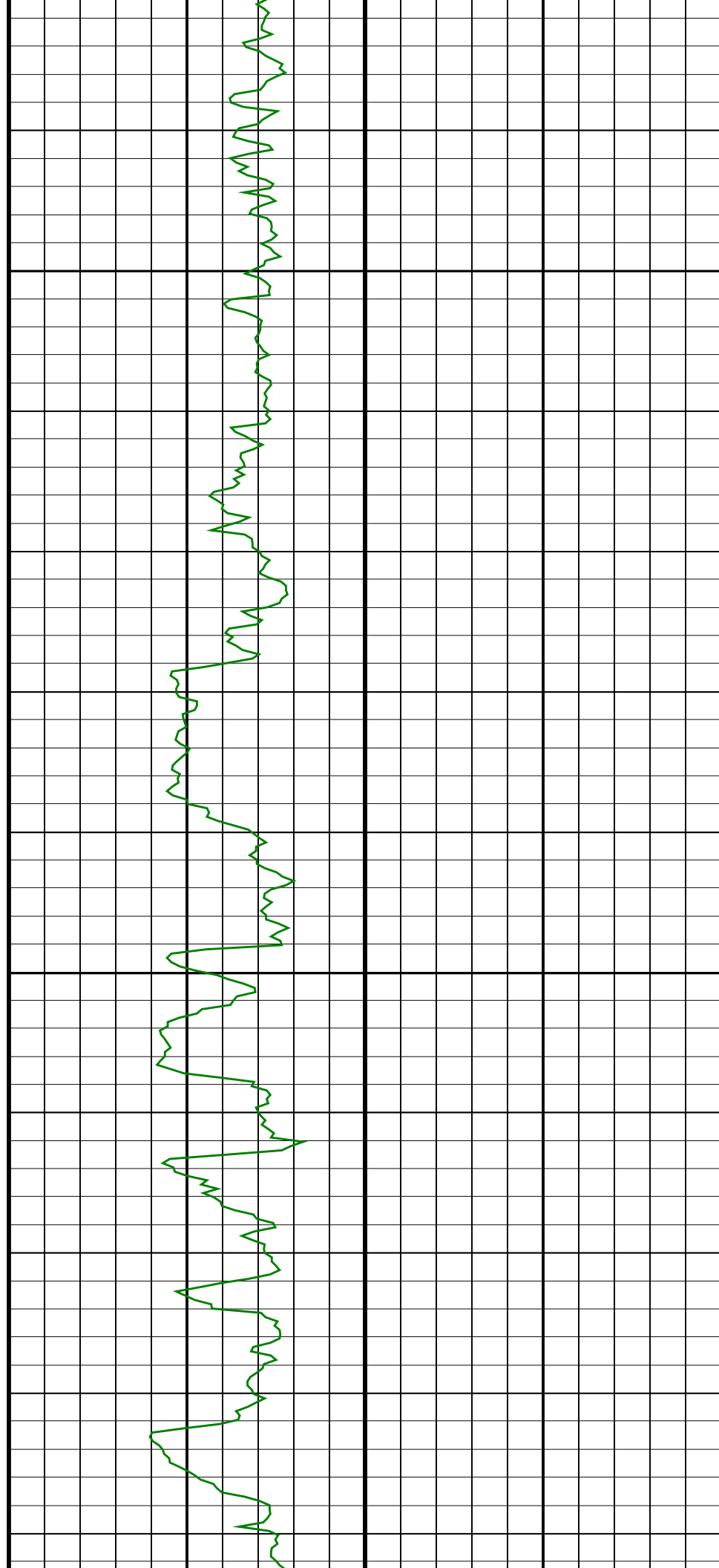
1950
TVD

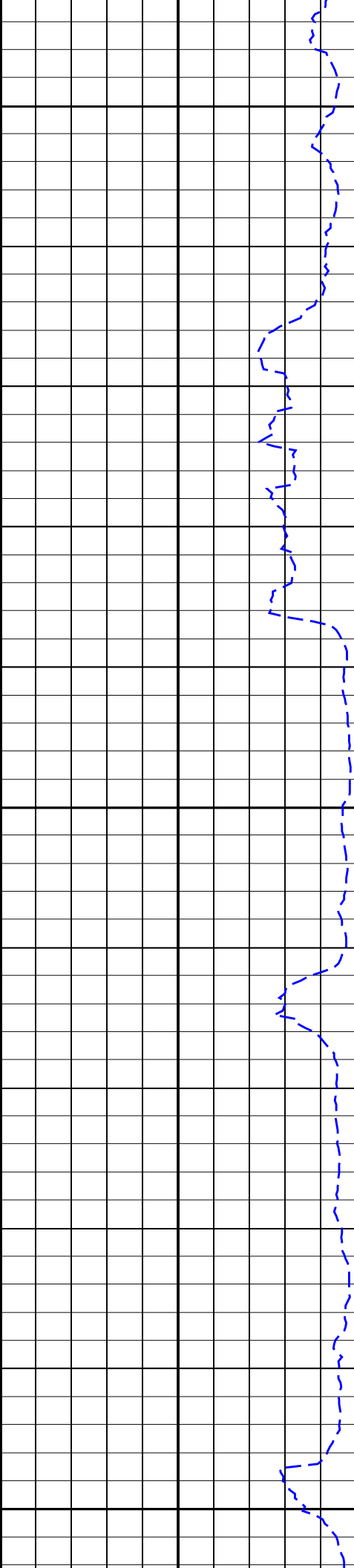




1975
TVD

2000
TVD

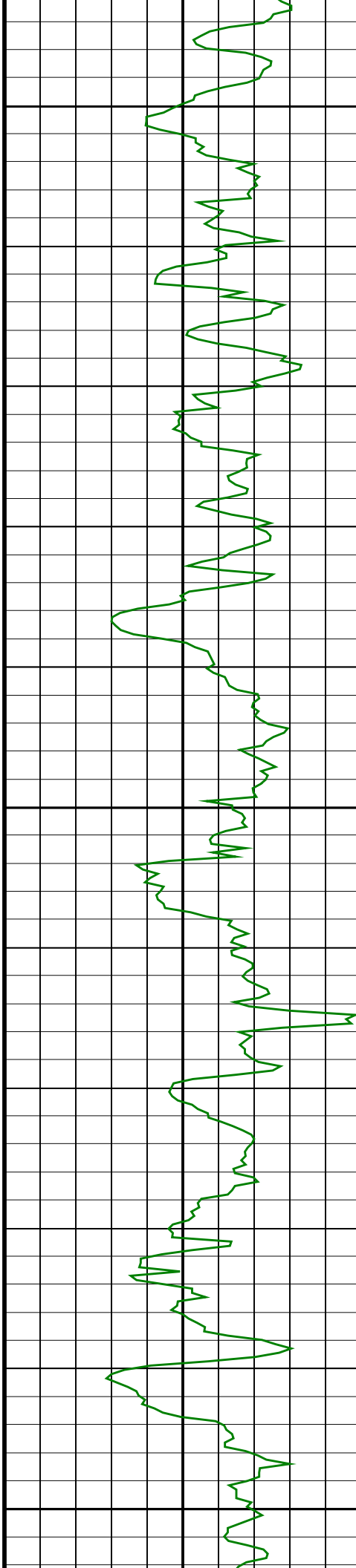


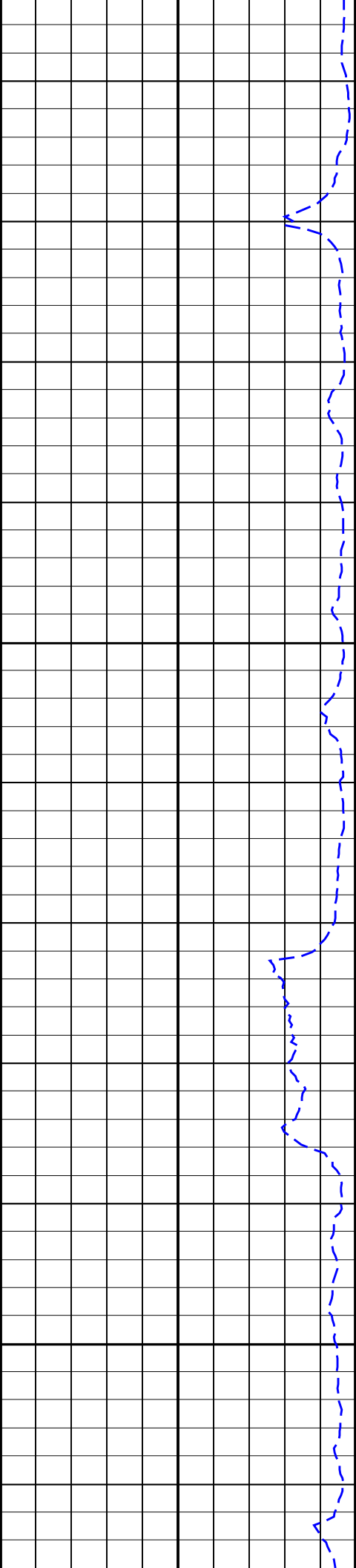


2025
TVD

2050
TVD

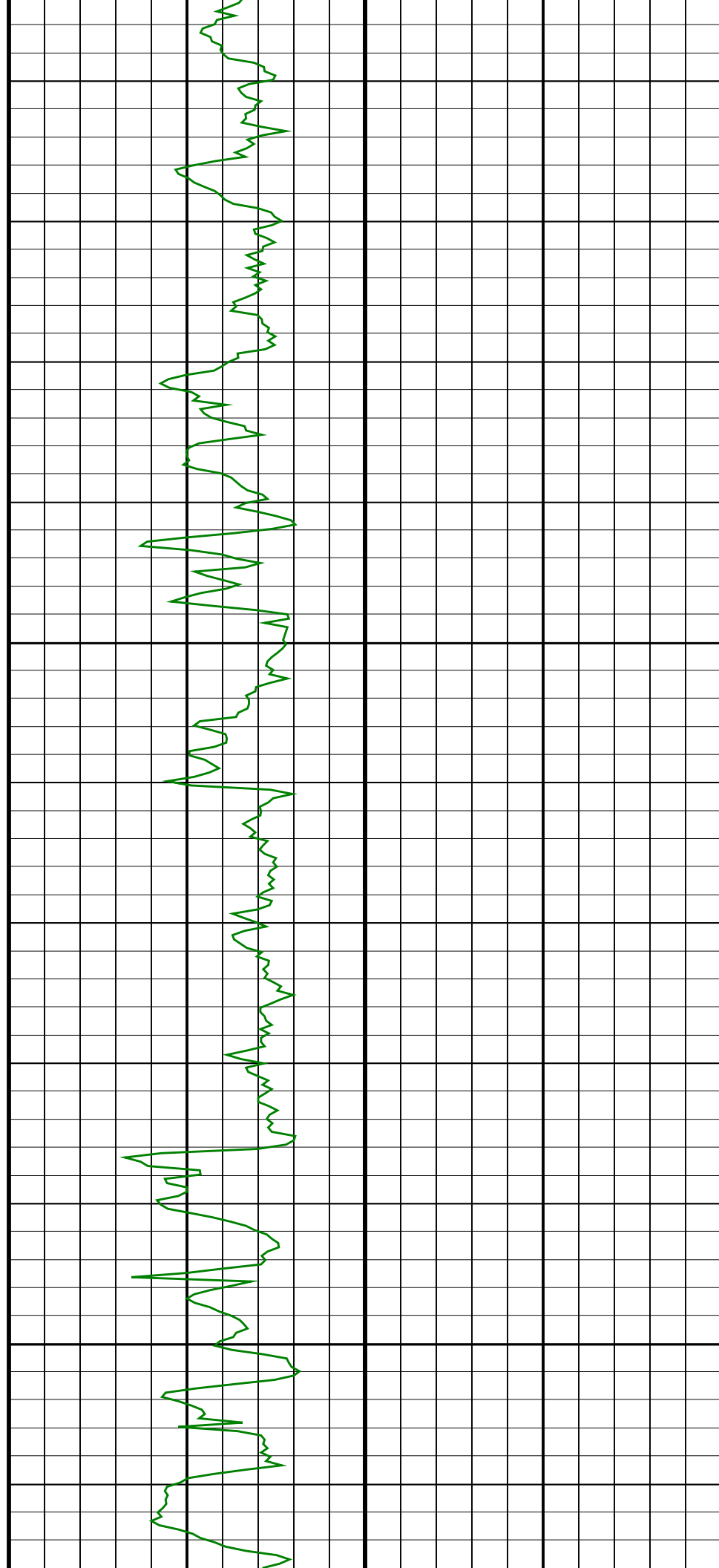
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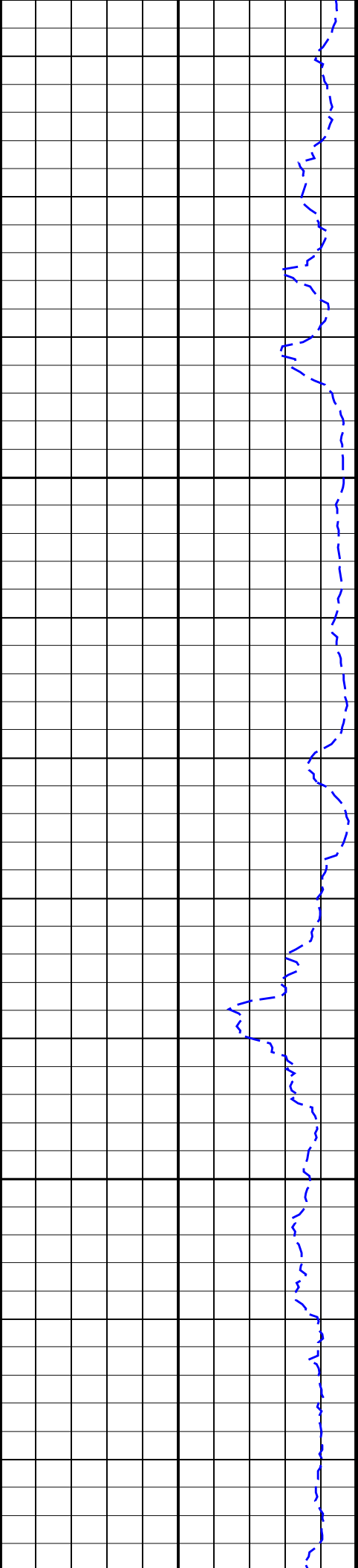




2100
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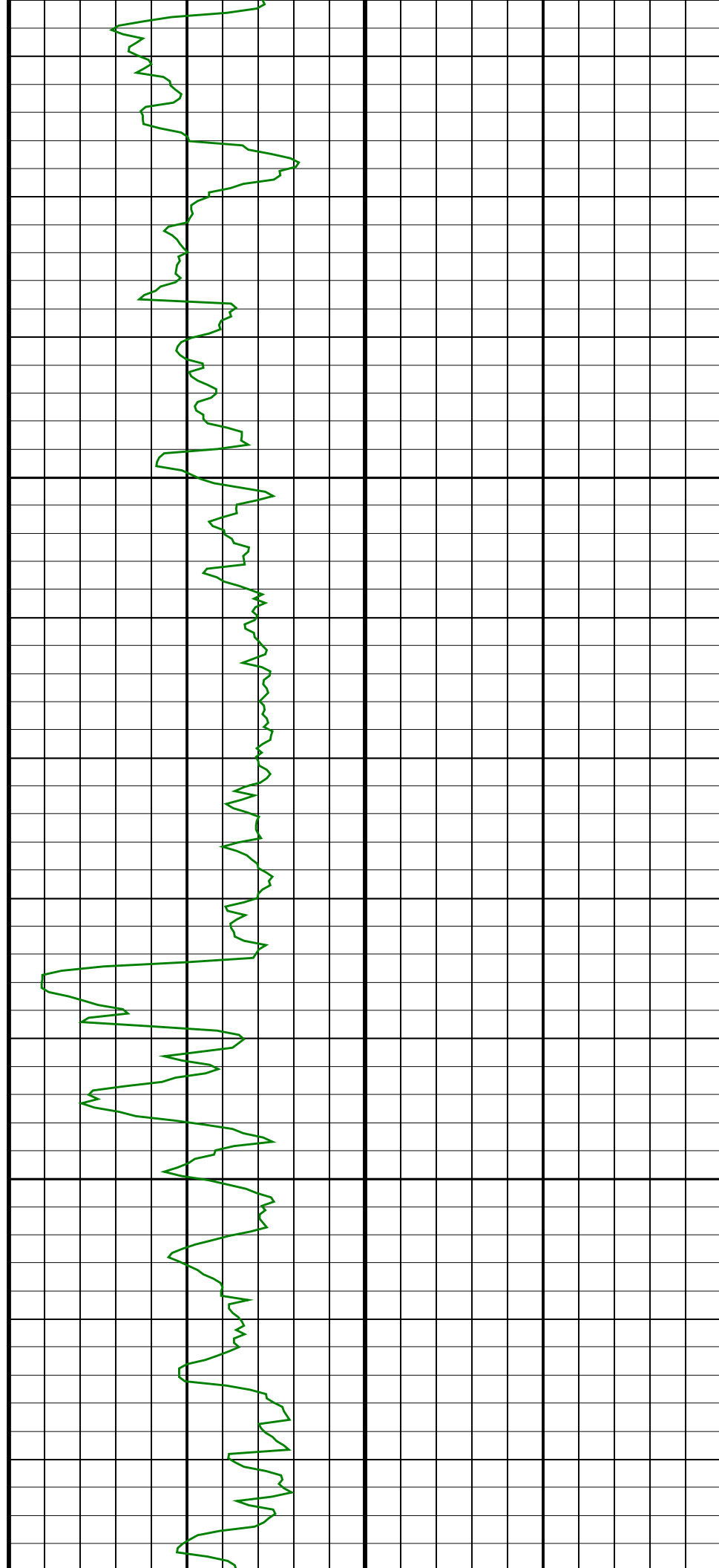
2125
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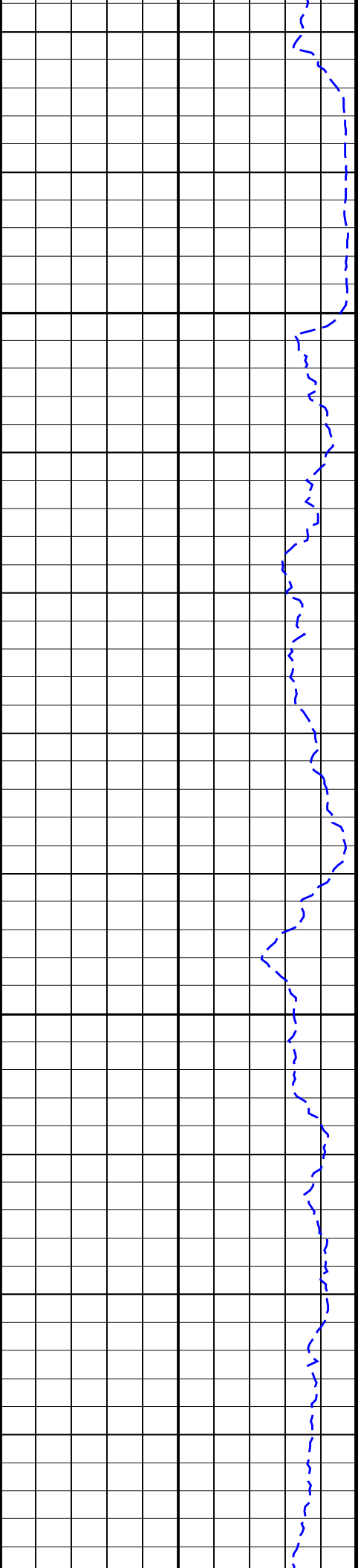




2150
TVD

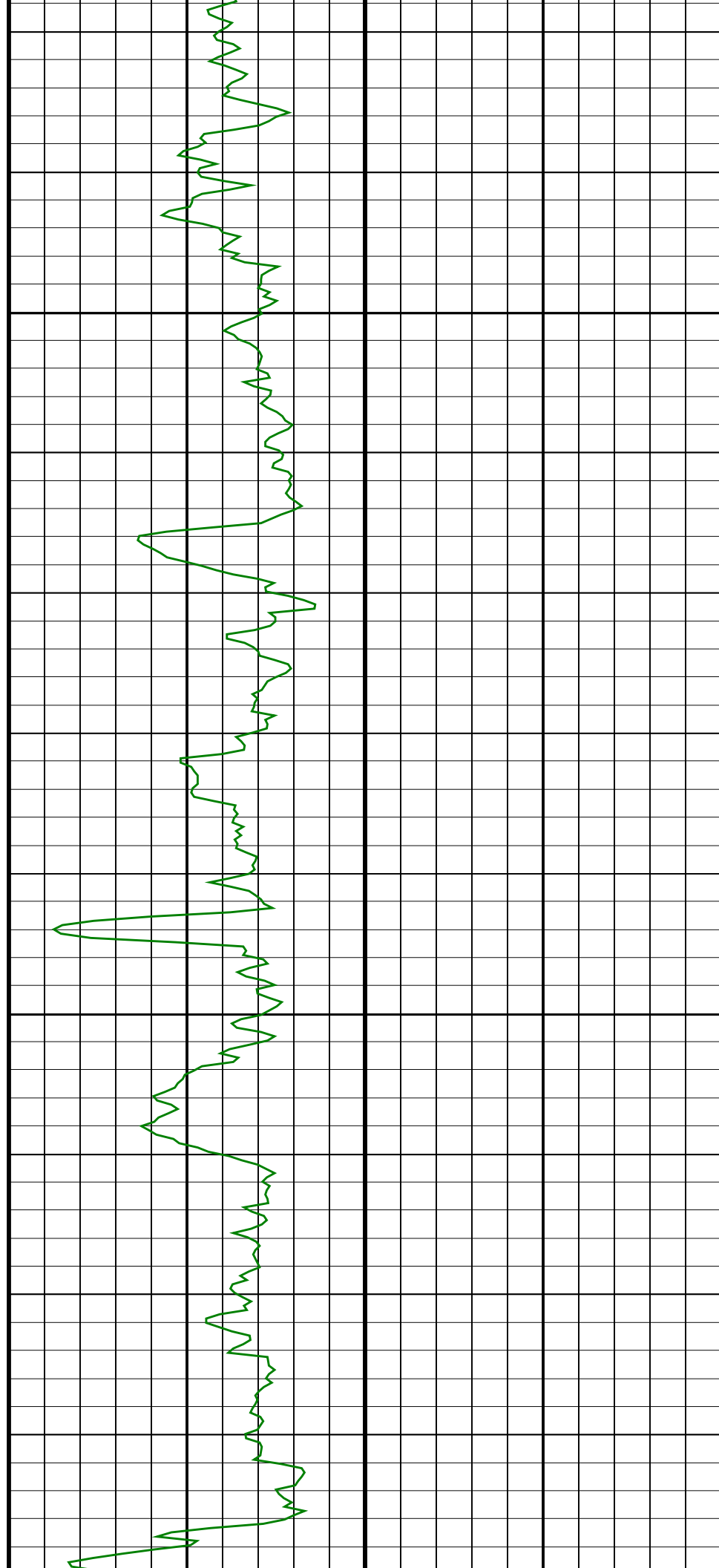
2175
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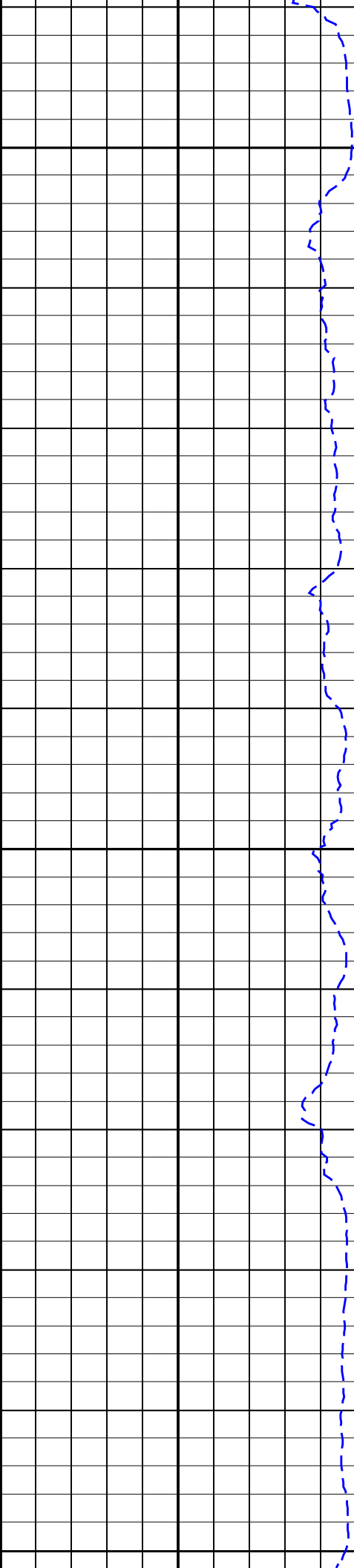




2200
TVD

2225
TVD

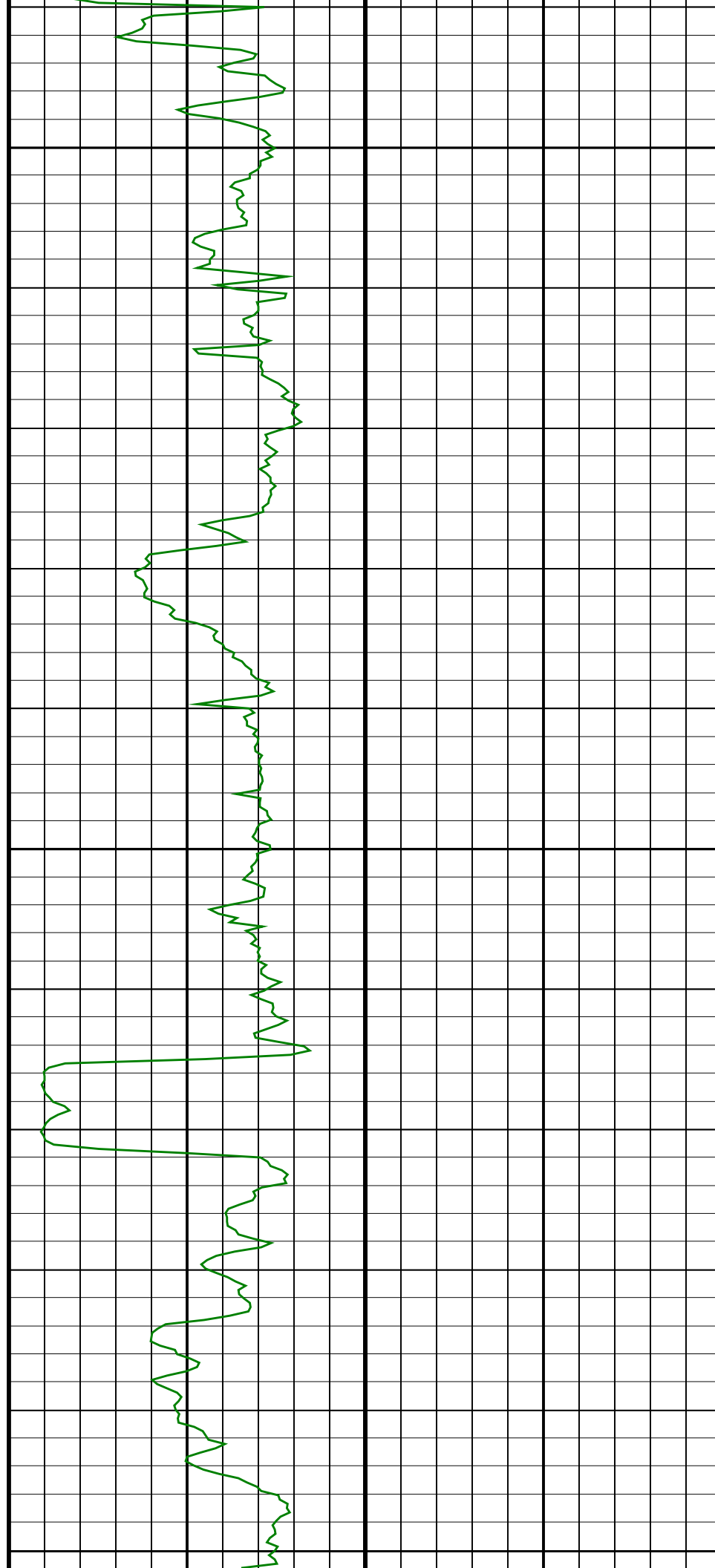


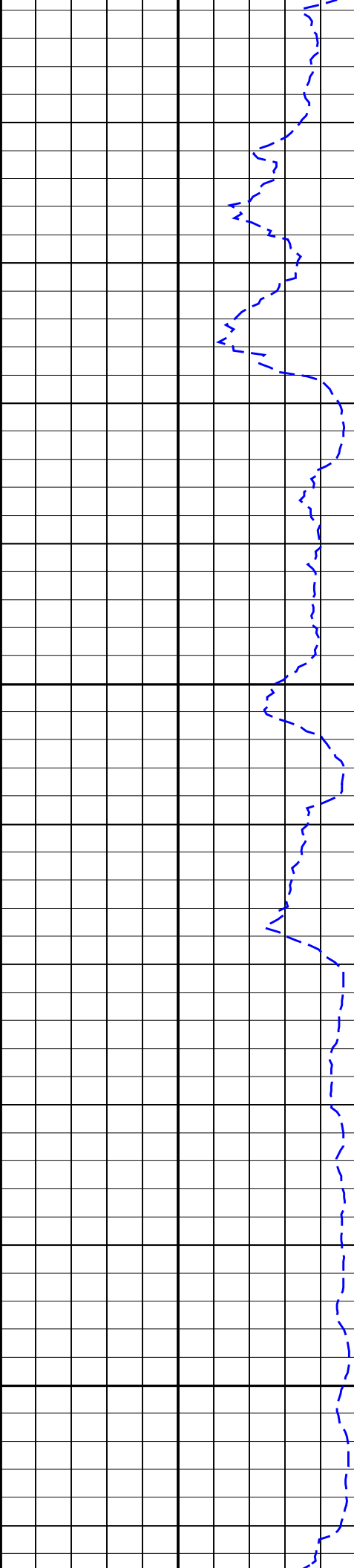


2250
TVD

2275
TVD

2300

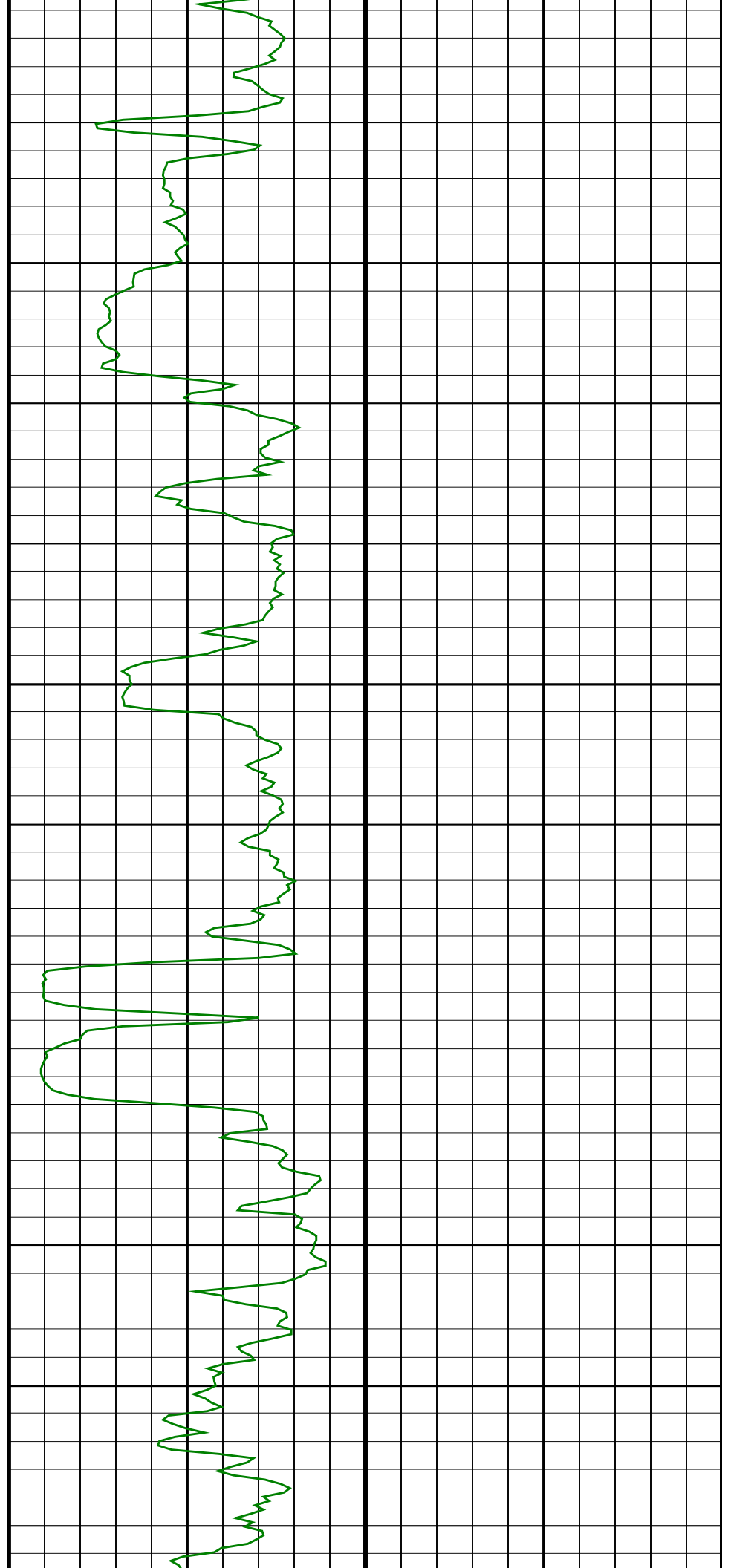


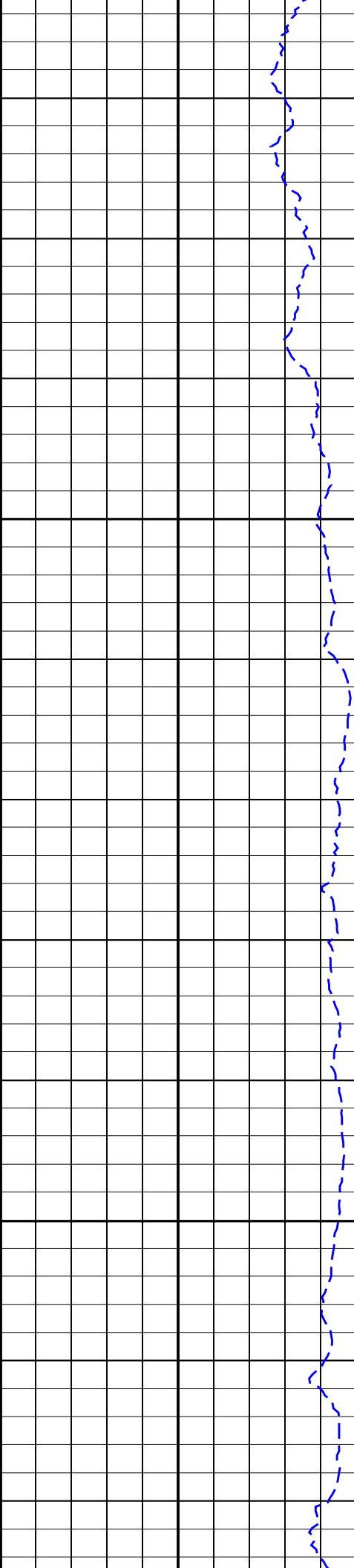


2300
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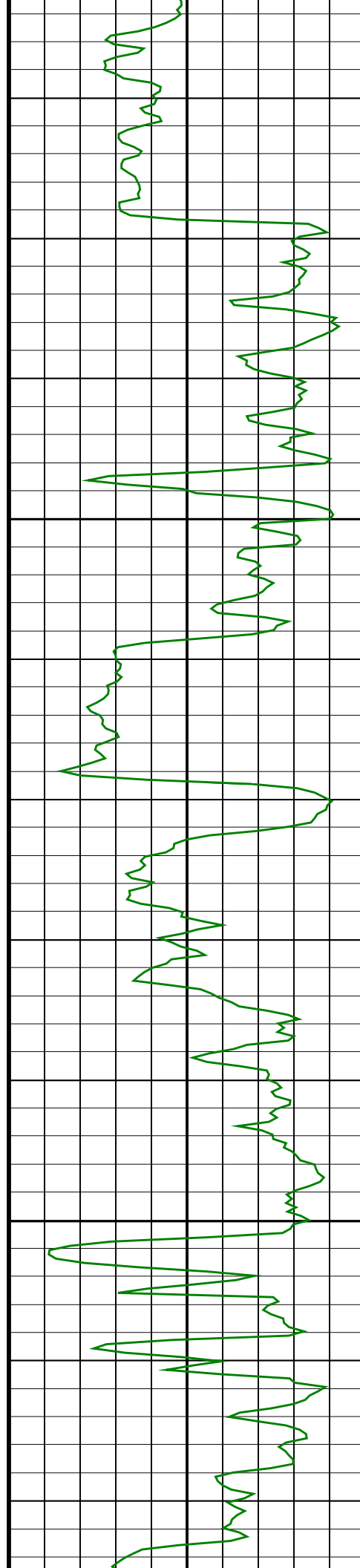
2325
TVD

2350
TVD

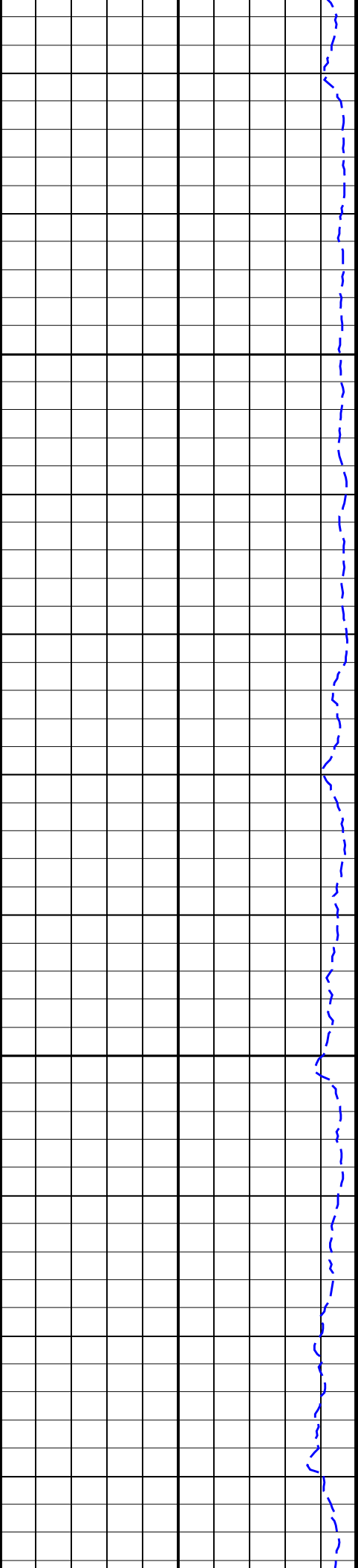




2375
TVD

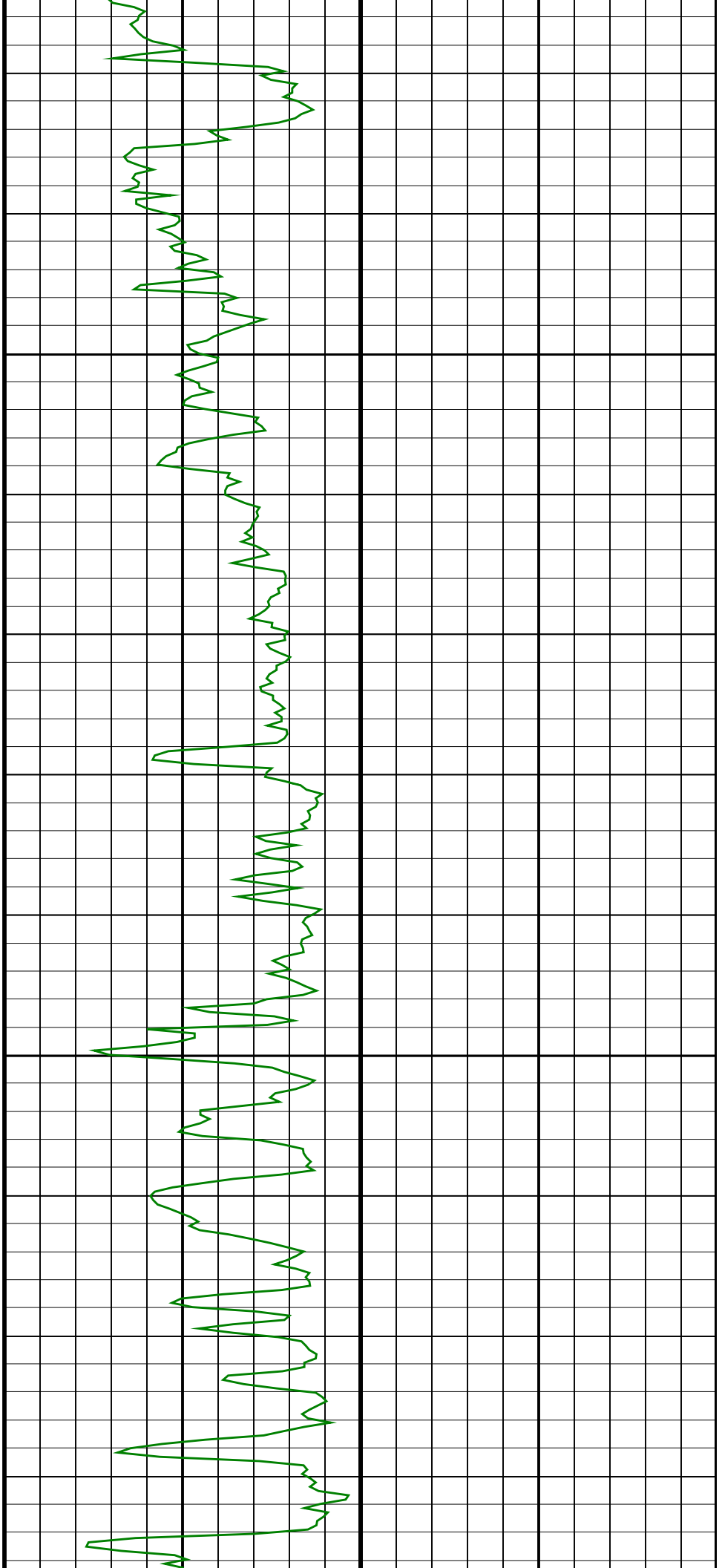


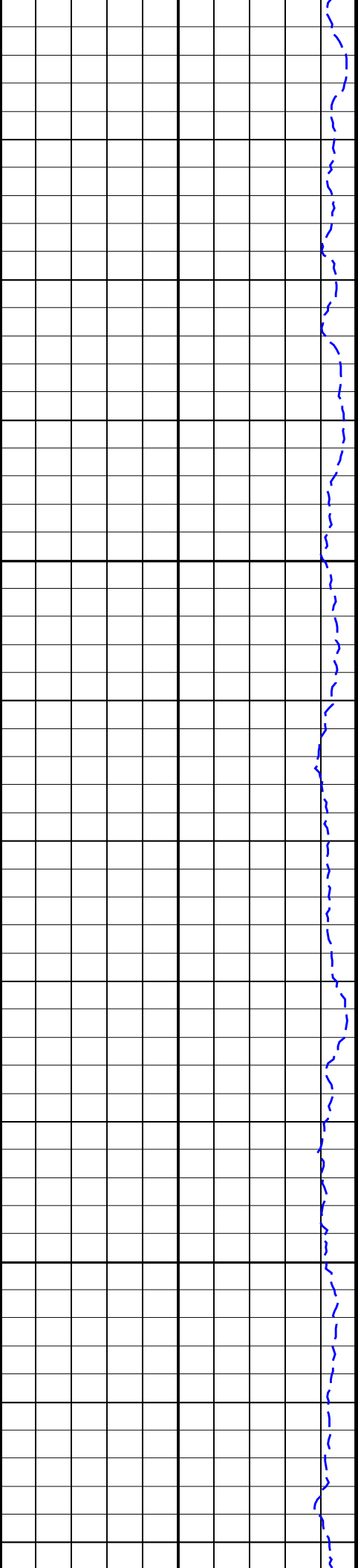
2400
TVD



2425
TVD

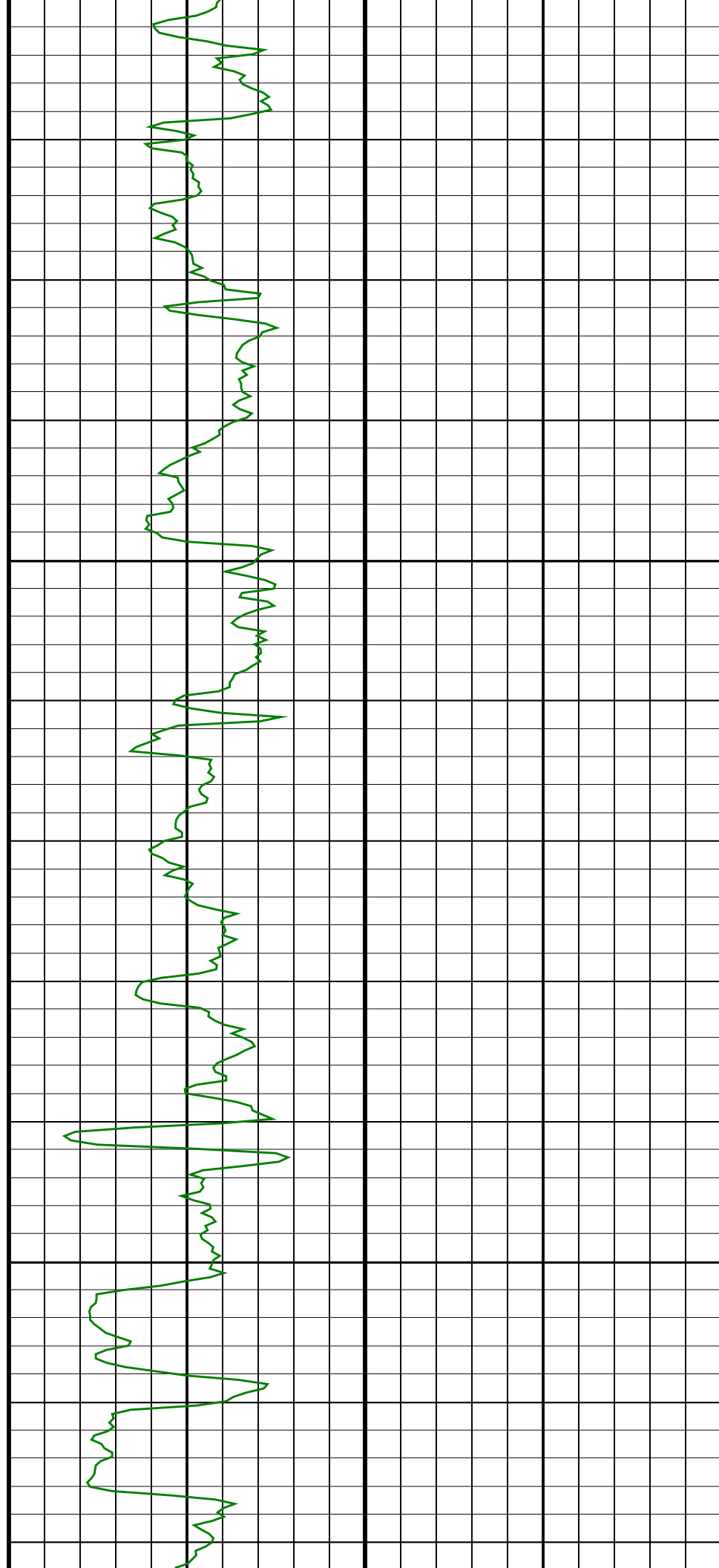
2450
TVD

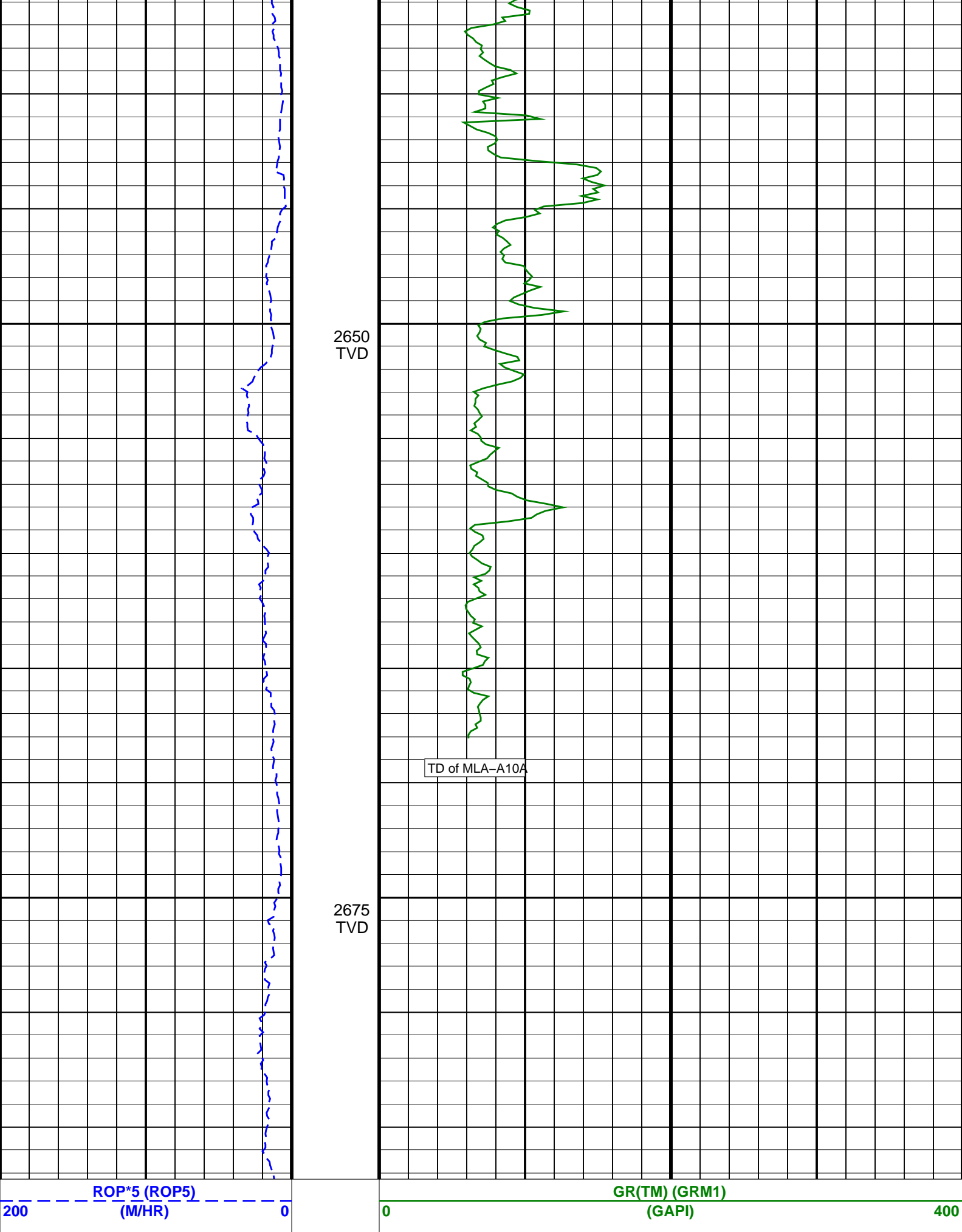




2600
TVD

2625
TVD





Client.....: ESSO Australia Pty. Ltd.
Field.....: Turrum

Well.....: MLA-A10A Spud date.....: 03-Aug-04
API number.....: Last survey date.....: 23-Aug-04
Engineer.....: R. Borjas/J. Dolan/L. Johnston Total accepted surveys....: 91
MD of first survey.....: 703.90 m
RIG.....: ISDL 453 MD of last survey.....: 3248.00 m
STATE.....: Victoria

----- Survey calculation methods -----
Method for positions.....: Minimum curvature Magnetic model.....: BGGM version 2003
Method for DLS.....: Mason & Taylor Magnetic date.....: 03-Aug-2004
Magnetic field strength...: 1199.63 HCNT
----- Depth reference -----
Permanent datum.....: Mean Sea Level Magnetic dec (+E/W-).....: 13.14 degrees
Depth reference.....: Driller's Depth Magnetic dip.....: -68.73 degrees
GL above permanent.....: -59.00 m
KB above permanent.....: 27.91 m
DF above permanent.....: 27.91 m
----- MWD survey Reference Criteria -----
Reference G.....: 1000.03 mGal
Reference H.....: 1199.63 HCNT
Reference Dip.....: -68.73 degrees
----- Vertical section origin -----
Latitude (+N/S-).....: 0.00 m Tolerance of G.....: (+/-) 2.50 mGal
Departure (+E/W-).....: 0.00 m Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.14 degrees
Grid convergence (+E/W-).....: -0.76 degrees
Total az corr (+E/W-).....: 13.90 degrees
Azimuth from rotary table to target: 120.20 degrees (Total az corr = magnetic dec - grid conv)
Survey Correction Type ...:
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

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SCHLUMBERGER Survey Report

23-Aug-2004 06:48:55

Page 2 of 5

| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (deg) | At Azim 100f | DLS type | Srvy tool | Tool Corr |
|-------|--------------------|------------------|---------------------|-------------------|---------------|----------------------|-----------------|-----------------|-------------------|--------------|----------|-----------|-----------|
| 1 | 645.00 | 35.55 | 160.36 | 0.00 | 618.78 | 138.61 | -135.85 | 81.31 | 158.32 | 149.10 | 0.00 | TIP | None |
| 2 | 703.90 | 40.14 | 144.21 | 58.90 | 665.39 | 169.13 | -167.47 | 98.22 | 194.15 | 149.61 | 5.63 | MWD | None |
| 3 | 732.14 | 40.55 | 141.06 | 28.24 | 686.92 | 186.02 | -182.00 | 109.31 | 212.30 | 149.01 | 2.24 | MWD | None |
| 4 | 761.57 | 40.68 | 142.73 | 29.43 | 709.26 | 203.82 | -197.07 | 121.13 | 231.32 | 148.42 | 1.13 | MWD | None |
| 5 | 790.20 | 41.02 | 143.18 | 28.63 | 730.92 | 221.09 | -212.02 | 132.42 | 249.97 | 148.01 | 0.48 | MWD | None |
| 6 | 818.78 | 41.08 | 138.63 | 28.58 | 752.48 | 238.64 | -226.58 | 144.24 | 268.60 | 147.52 | 3.19 | MWD | None |
| 7 | 847.90 | 41.36 | 134.42 | 29.12 | 774.38 | 257.05 | -240.49 | 157.44 | 287.45 | 146.79 | 2.92 | MWD | None |
| 8 | 876.11 | 41.48 | 127.82 | 28.21 | 795.55 | 275.35 | -252.75 | 171.49 | 305.44 | 145.84 | 4.72 | MWD | None |
| 9 | 904.81 | 42.40 | 122.89 | 28.70 | 816.90 | 294.44 | -263.84 | 187.12 | 323.46 | 144.65 | 3.63 | MWD | None |
| 10 | 932.86 | 43.46 | 120.24 | 28.05 | 837.44 | 313.54 | -273.83 | 203.40 | 341.11 | 143.40 | 2.27 | MWD | None |
| 11 | 961.92 | 43.74 | 119.87 | 29.06 | 858.49 | 333.58 | -283.87 | 220.75 | 359.60 | 142.13 | 0.40 | MWD | None |
| 12 | 990.86 | 43.60 | 119.86 | 28.94 | 879.42 | 353.56 | -293.82 | 238.08 | 378.17 | 140.98 | 0.15 | MWD | None |
| 13 | 1019.22 | 43.67 | 119.61 | 28.36 | 899.94 | 373.13 | -303.53 | 255.07 | 396.47 | 139.96 | 0.20 | MWD | None |
| 14 | 1048.10 | 43.59 | 119.59 | 28.88 | 920.85 | 393.06 | -313.37 | 272.40 | 415.21 | 139.00 | 0.09 | MWD | None |
| 15 | 1076.57 | 44.20 | 120.95 | 28.47 | 941.36 | 412.79 | -323.32 | 289.44 | 433.95 | 138.16 | 1.20 | MWD | None |
| 16 | 1105.41 | 44.22 | 120.79 | 28.84 | 962.04 | 432.90 | -333.64 | 306.70 | 453.19 | 137.41 | 0.12 | MWD | None |
| 17 | 1133.86 | 44.16 | 120.71 | 28.45 | 982.44 | 452.73 | -343.78 | 323.75 | 472.22 | 136.72 | 0.09 | MWD | None |
| 18 | 1162.44 | 43.94 | 120.88 | 28.58 | 1002.98 | 472.60 | -353.95 | 340.82 | 491.36 | 136.08 | 0.27 | MWD | None |
| 19 | 1191.10 | 43.77 | 120.76 | 28.66 | 1023.64 | 492.46 | -364.12 | 357.87 | 510.55 | 135.50 | 0.20 | MWD | None |
| 20 | 1219.70 | 43.60 | 120.49 | 28.60 | 1044.33 | 512.21 | -374.19 | 374.87 | 529.66 | 134.95 | 0.27 | MWD | None |
| 21 | 1248.31 | 43.43 | 120.24 | 28.61 | 1065.07 | 531.91 | -384.14 | 391.86 | 548.75 | 134.43 | 0.26 | MWD | None |
| 22 | 1276.86 | 43.32 | 120.49 | 28.55 | 1085.83 | 551.52 | -394.06 | 408.78 | 567.79 | 133.95 | 0.22 | MWD | None |
| 23 | 1305.91 | 43.14 | 120.26 | 29.05 | 1106.99 | 571.42 | -404.12 | 425.95 | 587.15 | 133.49 | 0.25 | MWD | None |
| 24 | 1334.56 | 43.88 | 121.50 | 28.65 | 1127.77 | 591.14 | -414.24 | 442.88 | 606.41 | 133.09 | 1.20 | MWD | None |
| 25 | 1362.97 | 43.95 | 121.60 | 28.41 | 1148.24 | 610.84 | -424.55 | 459.67 | 625.73 | 132.73 | 0.11 | MWD | None |
| 26 | 1391.85 | 43.62 | 121.88 | 28.88 | 1169.09 | 630.81 | -435.07 | 476.66 | 645.36 | 132.39 | 0.40 | MWD | None |
| 27 | 1420.66 | 43.21 | 121.88 | 28.81 | 1190.01 | 650.61 | -445.52 | 493.48 | 664.84 | 132.08 | 0.43 | MWD | None |
| 28 | 1450.71 | 43.22 | 121.88 | 30.05 | 1211.91 | 671.17 | -456.39 | 510.95 | 685.10 | 131.77 | 0.01 | MWD | None |
| 29 | 1479.58 | 44.21 | 123.67 | 28.87 | 1232.78 | 691.10 | -467.19 | 527.72 | 704.81 | 131.52 | 1.67 | MWD | None |
| 30 | 1508.27 | 44.15 | 123.85 | 28.69 | 1253.36 | 711.06 | -478.30 | 544.34 | 724.63 | 131.31 | 0.15 | MWD | None |

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SCHLUMBERGER Survey Report

23-Aug-2004 06:48:55

Page 3 of 5

| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (deg) | At Azim 100f | DLS (deg) | Srvy tool | Tool Corr |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-------------------------|--------------------|--------------|--------------|--------------|
| 31 | 1536.77 | 44.13 | 123.83 | 28.51 | 1273.82 | 730.87 | -489.36 | 560.83 | 744.32 | 131.11 | 0.03 | MWD | None |
| 32 | 1565.03 | 44.15 | 123.85 | 28.25 | 1294.09 | 750.51 | -500.32 | 577.18 | 763.84 | 130.92 | 0.03 | MWD | None |
| 33 | 1594.24 | 43.93 | 123.85 | 29.21 | 1315.09 | 770.77 | -511.63 | 594.04 | 783.99 | 130.74 | 0.23 | MWD | None |
| 34 | 1622.84 | 43.75 | 123.89 | 28.60 | 1335.72 | 790.54 | -522.67 | 610.49 | 803.66 | 130.57 | 0.19 | MWD | None |
| 35 | 1651.34 | 43.46 | 123.89 | 28.50 | 1356.35 | 810.16 | -533.63 | 626.80 | 823.19 | 130.41 | 0.31 | MWD | None |
| 36 | 1679.44 | 43.51 | 123.98 | 28.10 | 1376.74 | 829.45 | -544.42 | 642.85 | 842.41 | 130.26 | 0.09 | MWD | None |
| 37 | 1708.34 | 44.04 | 123.25 | 28.90 | 1397.61 | 849.41 | -555.49 | 659.50 | 862.27 | 130.11 | 0.77 | MWD | None |
| 38 | 1736.89 | 44.00 | 123.04 | 28.55 | 1418.14 | 869.22 | -566.34 | 676.11 | 881.96 | 129.95 | 0.16 | MWD | None |
| 39 | 1765.56 | 44.26 | 122.92 | 28.67 | 1438.72 | 889.16 | -577.20 | 692.86 | 901.78 | 129.80 | 0.29 | MWD | None |
| 40 | 1794.14 | 44.76 | 122.09 | 28.58 | 1459.10 | 909.18 | -587.97 | 709.75 | 921.66 | 129.64 | 0.82 | MWD | None |
| 41 | 1823.71 | 45.45 | 122.24 | 29.57 | 1479.97 | 930.12 | -599.12 | 727.48 | 942.43 | 129.47 | 0.72 | MWD | None |
| 42 | 1852.95 | 44.04 | 122.56 | 29.23 | 1500.73 | 950.68 | -610.15 | 744.86 | 962.86 | 129.32 | 1.49 | MWD | None |
| 43 | 1880.92 | 43.53 | 122.31 | 27.98 | 1520.93 | 970.02 | -620.53 | 761.20 | 982.08 | 129.19 | 0.59 | MWD | None |
| 44 | 1909.80 | 43.11 | 122.55 | 28.88 | 1541.94 | 989.82 | -631.15 | 777.92 | 1001.76 | 129.05 | 0.48 | MWD | None |
| 45 | 1938.87 | 43.09 | 122.69 | 29.07 | 1563.17 | 1009.67 | -641.86 | 794.65 | 1021.50 | 128.93 | 0.11 | MWD | None |
| 46 | 1964.78 | 43.75 | 122.35 | 25.91 | 1581.99 | 1027.46 | -651.43 | 809.67 | 1039.19 | 128.82 | 0.83 | MWD | None |
| 47 | 1996.00 | 43.67 | 122.25 | 31.22 | 1604.56 | 1049.02 | -662.96 | 827.90 | 1060.63 | 128.69 | 0.10 | MWD | None |
| 48 | 2024.60 | 43.18 | 122.11 | 28.60 | 1625.33 | 1068.66 | -673.43 | 844.54 | 1080.17 | 128.57 | 0.53 | MWD | None |
| 49 | 2053.10 | 43.26 | 121.90 | 28.50 | 1646.10 | 1088.17 | -683.78 | 861.09 | 1099.56 | 128.45 | 0.18 | MWD | None |
| 50 | 2082.05 | 43.39 | 121.91 | 28.95 | 1667.16 | 1108.03 | -694.27 | 877.95 | 1119.29 | 128.34 | 0.14 | MWD | None |
| 51 | 2110.79 | 43.74 | 122.04 | 28.74 | 1687.98 | 1127.82 | -704.76 | 894.75 | 1138.98 | 128.23 | 0.38 | MWD | None |
| 52 | 2139.52 | 44.20 | 121.99 | 28.73 | 1708.66 | 1147.76 | -715.34 | 911.67 | 1158.81 | 128.12 | 0.49 | MWD | None |
| 53 | 2168.19 | 43.87 | 122.07 | 28.67 | 1729.27 | 1167.68 | -725.91 | 928.56 | 1178.63 | 128.02 | 0.36 | MWD | None |
| 54 | 2195.93 | 43.58 | 122.31 | 27.74 | 1749.32 | 1186.84 | -736.12 | 944.79 | 1197.71 | 127.92 | 0.37 | MWD | None |
| 55 | 2225.38 | 43.20 | 122.34 | 29.45 | 1770.72 | 1207.06 | -746.94 | 961.88 | 1217.84 | 127.83 | 0.39 | MWD | None |
| 56 | 2253.34 | 43.84 | 122.56 | 27.96 | 1790.99 | 1226.30 | -757.27 | 978.13 | 1237.01 | 127.75 | 0.72 | MWD | None |
| 57 | 2282.79 | 43.44 | 122.67 | 29.45 | 1812.30 | 1246.60 | -768.22 | 995.25 | 1257.26 | 127.66 | 0.42 | MWD | None |
| 58 | 2311.17 | 42.99 | 122.68 | 28.38 | 1832.99 | 1266.02 | -778.72 | 1011.61 | 1276.62 | 127.59 | 0.48 | MWD | None |
| 59 | 2339.70 | 42.24 | 122.92 | 28.53 | 1853.98 | 1285.31 | -789.18 | 1027.85 | 1295.87 | 127.52 | 0.82 | MWD | None |
| 60 | 2368.21 | 41.26 | 123.08 | 28.51 | 1875.25 | 1304.28 | -799.52 | 1043.77 | 1314.79 | 127.45 | 1.05 | MWD | None |

[[c)2004 IDEAL ID8_1C_01]
SCHLUMBERGER Survey Report

23-Aug-2004 06:48:55

Page 4 of 5

| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (deg) | At Azim 100f | DLS (deg) | Srvy tool | Tool Corr |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-------------------------|--------------------|--------------|--------------|--------------|
| 61 | 2396.80 | 42.45 | 123.60 | 28.59 | 1896.55 | 1323.32 | -810.00 | 1059.70 | 1333.82 | 127.39 | 1.32 | MWD | None |
| 62 | 2425.38 | 39.14 | 121.62 | 28.58 | 1918.18 | 1341.97 | -820.07 | 1075.42 | 1352.43 | 127.33 | 3.79 | MWD | None |
| 63 | 2454.28 | 37.00 | 118.22 | 28.90 | 1940.94 | 1359.79 | -828.97 | 1090.86 | 1370.09 | 127.23 | 3.16 | MWD | None |
| 64 | 2483.13 | 35.18 | 116.54 | 28.85 | 1964.25 | 1376.76 | -836.79 | 1105.94 | 1386.84 | 127.11 | 2.19 | MWD | None |
| 65 | 2511.94 | 32.27 | 114.92 | 28.81 | 1988.21 | 1392.70 | -843.74 | 1120.35 | 1402.52 | 126.98 | 3.22 | MWD | None |
| 66 | 2540.74 | 28.93 | 111.27 | 28.80 | 2013.00 | 1407.25 | -849.51 | 1133.81 | 1416.76 | 126.84 | 4.04 | MWD | None |
| 67 | 2569.71 | 27.16 | 106.89 | 28.97 | 2038.57 | 1420.61 | -853.97 | 1146.67 | 1429.73 | 126.68 | 2.86 | MWD | None |
| 68 | 2598.39 | 25.54 | 103.63 | 28.68 | 2064.27 | 1432.90 | -857.33 | 1158.95 | 1441.59 | 126.49 | 2.31 | MWD | None |
| 69 | 2626.92 | 22.22 | 100.97 | 28.53 | 2090.35 | 1443.89 | -859.81 | 1170.22 | 1452.13 | 126.31 | 3.73 | MWD | None |
| 70 | 2655.76 | 20.27 | 92.04 | 28.84 | 2117.24 | 1453.45 | -861.02 | 1180.57 | 1461.20 | 126.10 | 3.99 | MWD | None |
| 71 | 2684.07 | 20.16 | 81.42 | 28.31 | 2143.81 | 1461.58 | -860.47 | 1190.30 | 1468.75 | 125.86 | 3.95 | MWD | None |
| 72 | 2713.00 | 19.76 | 77.75 | 28.93 | 2171.01 | 1469.08 | -858.69 | 1200.01 | 1475.59 | 125.59 | 1.39 | MWD | None |
| 73 | 2741.62 | 19.40 | 76.77 | 28.62 | 2197.97 | 1476.10 | -856.57 | 1209.36 | 1481.99 | 125.31 | 0.52 | MWD | None |
| 74 | 2770.13 | 18.28 | 77.13 | 28.51 | 2224.95 | 1482.80 | -854.49 | 1218.33 | 1488.12 | 125.04 | 1.20 | MWD | None |
| 75 | 2798.77 | 17.51 | 77.18 | 28.64 | 2252.21 | 1489.23 | -852.54 | 1226.91 | 1494.03 | 124.79 | 0.82 | MWD | None |
| 76 | 2827.33 | 17.29 | 76.90 | 28.56 | 2279.46 | 1495.46 | -850.62 | 1235.24 | 1499.79 | 124.55 | 0.25 | MWD | None |
| 77 | 2856.42 | 18.68 | 72.75 | 29.09 | 2307.13 | 1501.76 | -848.26 | 1243.90 | 1505.60 | 124.29 | 1.98 | MWD | None |
| 78 | 2884.76 | 17.92 | 71.45 | 28.34 | 2334.04 | 1507.70 | -845.53 | 1252.36 | 1511.07 | 124.03 | 0.93 | MWD | None |
| 79 | 2913.49 | 18.61 | 64.18 | 28.73 | 2361.32 | 1513.18 | -842.13 | 1260.68 | 1516.08 | 123.74 | 2.52 | MWD | None |
| 80 | 2942.44 | 17.74 | 65.89 | 28.95 | 2388.83 | 1518.34 | -838.31 | 1268.87 | 1520.79 | 123.45 | 1.07 | MWD | None |
| 81 | 2970.95 | 16.77 | 68.09 | 28.51 | 2416.05 | 1523.40 | -835.00 | 1276.65 | 1525.47 | 123.19 | 1.25 | MWD | None |
| 82 | 2999.52 | 15.81 | 69.75 | 28.57 | 2443.48 | 1528.41 | -832.12 | 1284.12 | 1530.16 | 122.94 | 1.14 | MWD | None |
| 83 | 3028.29 | 14.08 | 73.13 | 28.77 | 2471.27 | 1533.29 | -829.74 | 1291.15 | 1534.78 | 122.73 | 2.05 | MWD | None |
| 84 | 3056.82 | 13.45 | 75.98 | 28.53 | 2498.98 | 1538.03 | -827.93 | 1297.69 | 1539.31 | 122.54 | 0.99 | MWD | None |
| 85 | 3085.62 | 11.70 | 83.42 | 28.80 | 2527.09 | 1542.77 | -826.79 | 1303.84 | 1543.88 | 122.38 | 2.52 | MWD | None |
| 86 | 3114.46 | 11.31 | 84.29 | 28.84 | 2555.35 | 1547.40 | -826.17 | 1309.56 | 1548.39 | 122.25 | 0.45 | MWD | None |
| 87 | 3143.17 | 10.33 | 87.65 | 28.71 | 2583.55 | 1551.85 | -825.79 | 1314.93 | 1552.73 | 122.13 | 1.24 | MWD | None |
| 88 | 3172.07 | 9.47 | 95.13 | 28.90 | 2612.02 | 1556.19 | -825.89 | 1319.89 | 1556.99 | 122.04 | 1.63 | MWD | None |
| 89 | 3200.78 | 9.03 | 99.46 | 28.71 | 2640.36 | 1560.43 | -824.77 | 1324.47 | 1561.17 | 121.96 | 0.87 | MWD | None |
| 90 | 3226.24 | 8.98 | 101.24 | 25.46 | 2665.51 | 1564.18 | -827.19 | 1328.38 | 1564.88 | 121.91 | 0.34 | MWD | None |

[[c)2004 IDEAL ID8_1C_01]
SCHLUMBERGER Survey Report

23-Aug-2004 06:48:55

Page 5 of 5

| Seq # | Measured depth (m) | Incl angle (deg) | Azimuth angle (deg) | Course length (m) | TVD depth (m) | Vertical section (m) | Displ +N/S- (m) | Displ +E/W- (m) | Total displ (deg) | At Azim 100f | DLS (deg) | Srvy tool | Tool Corr |
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-------------------------|--------------------|--------------|--------------|--------------|
|----------|--------------------------|------------------------|---------------------------|-------------------------|---------------------|----------------------------|-----------------------|-----------------------|-------------------------|--------------------|--------------|--------------|--------------|

| # | depth | angle | angle | length | depth | section | +N/S- | +E/W- | displ | Azim | (deg/ | tool | Corr |
|----|---------|-------|--------|--------|---------|---------|---------|---------|---------|--------|-------|------------|-------|
| - | (m) | (deg) | (deg) | (m) | (m) | (m) | (m) | (m) | (deg) | 100f) | type | (deg) | |
| 91 | 3248.00 | 8.94 | 102.66 | 21.76 | 2687.00 | 1567.40 | -827.89 | 1331.70 | 1568.07 | 121.87 | 0.31 | Projection | to TD |

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Company: **ESSO Australia Pty. Ltd.**

Schlumberger

Well: **MLA-A10A**

Field: **Turrum**

Rig: **ISDL 453**

State: **Victoria**

Gamma Ray Service
1:200 True Vertical Depth
Real Time Log