

**Schlumberger**

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

**Well: TNA A14A**

**Field: Tuna**

**Rig: ISDL 453**

**State: Victoria**

**TNA A14A  
Tuna  
ISDL 453**

**Gamma Ray Service**

**1:200 True Vertical Depth**

**Real Time Log**

Total depth:

3142.0 m

Spud date:

04-Mar-2005

Runs:

1 To 1

Location

Mean Sea Level

Permanent datum:

Drill Floor

Log measured from:

Driller's Depth

Depth reference:

Elevation

G.L.  
D.F.

K.B.

Top Drive

Latitude

-59.40 m

G.L.

31.32 m

Elev.:

0 m

Longitude

E143°25'10.289"

Other services:

S38°10'10.835"

API serial no.

Y = 5774406.73

X = 624345.81

Bore hole record

**Casing record**

Hole size

from

to

Size

9 5/8 in.

Density

40.0 lb/ft<sup>3</sup>

from

Surface

to

844.5 m

8 1/2 in.

3142.0 m

Mud record

from

to

Type

KCL/PHPA/Glycol

844.5 m

844.5 m

**DISCLAIMER**

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OTHER SERVICES FOR RUN1 Directional Drilling Directional Surveys	OTHER SERVICES FOR RUN	OTHER SERVICES FOR RUN
REMARKS: RUN NUMBER 1 8-1/2 in. hole was drilled from 844.5m to 3142.0m MD.  Depth is referenced to Driller's Depth.  Gamma Ray corrected for Tool Size, Bit Size and Mud Weight.  Mud Type is KCL/PHPA/Glycol.  POOH due to TD of TNA A14A.	REMARKS: RUN NUMBER	REMARKS: RUN NUMBER

Thank You for Choosing Schlumberger

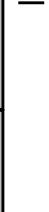
## EQUIPMENT DESCRIPTION

RUN1

RUN

RUN

### DOWNHOLE EQUIPMENT

6-3/4 in. PowerPulse*		24.39
MDC: V875		
MEC: 1533-BB		
MDI: 1565-CA		
MGR: 565-AA		
DHS: 7.0C00		
D&I		20.01
GR		19.37
6-5/8 in. NM Pony		15.87
S/N: ASS15700		
8-3/8 in. NM Roller Reamer		14.31
S/N: GU2298		
6-3/8 in. NM Pony		12.23
S/N: ANA98-007		
6-11/16 in. Float Sub		9.59
S/N: CMP1544		
7 in. PowerPak* Motor		9.14
A700GT 7:8		
S/N: 3380		
1.41 deg. Bent Housing		
8-3/8 in. Motor Sleeve		



Smith PDC Bit  
OD: 8-1/2 in.  
S73VPX S/N: JT7330

Maximum string diameter 8.50 in.

All lengths in Meters

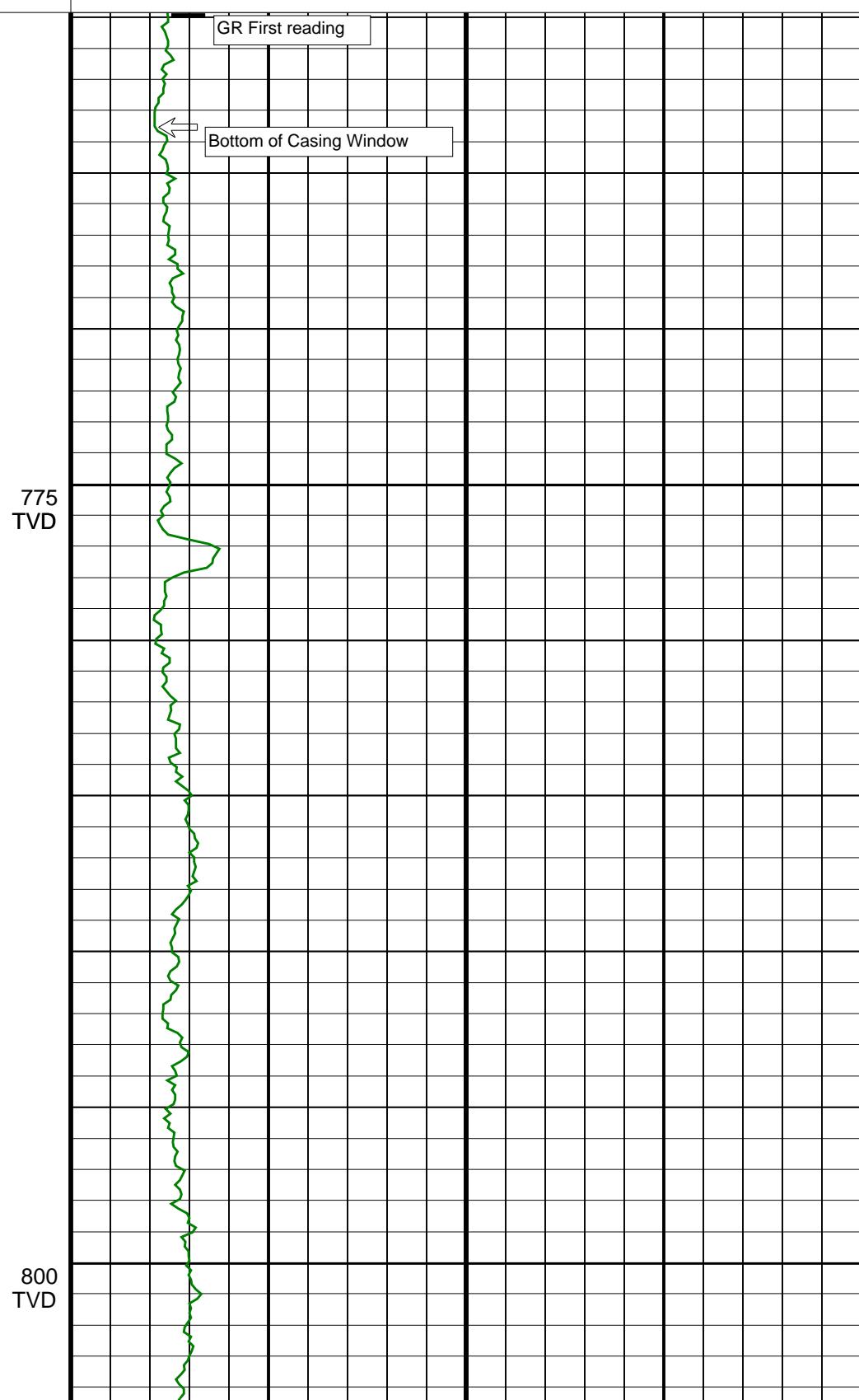
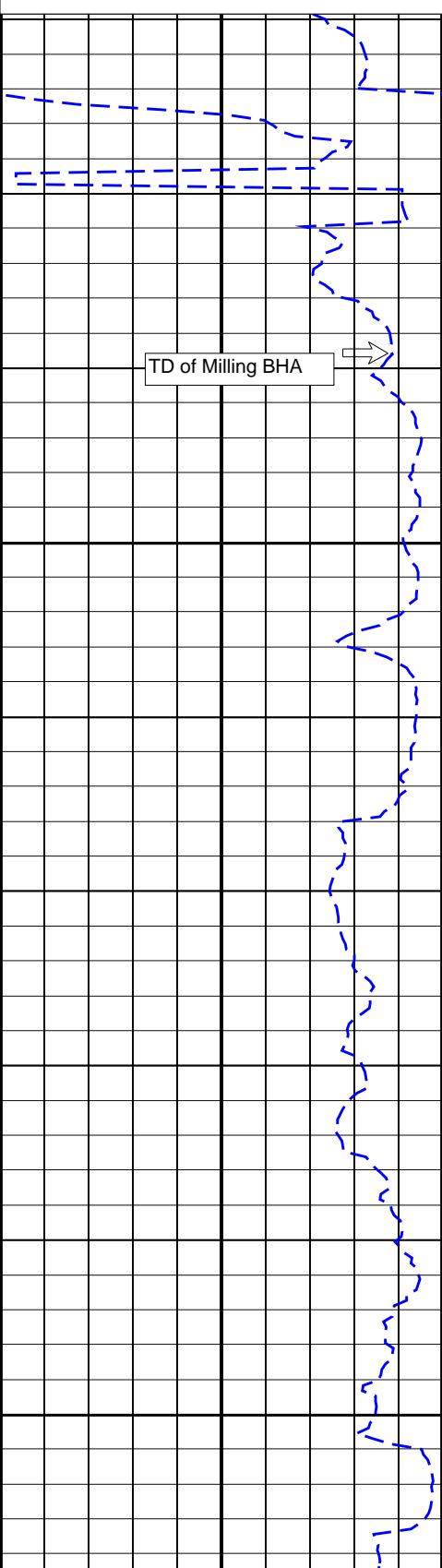
## Bit Run Summary

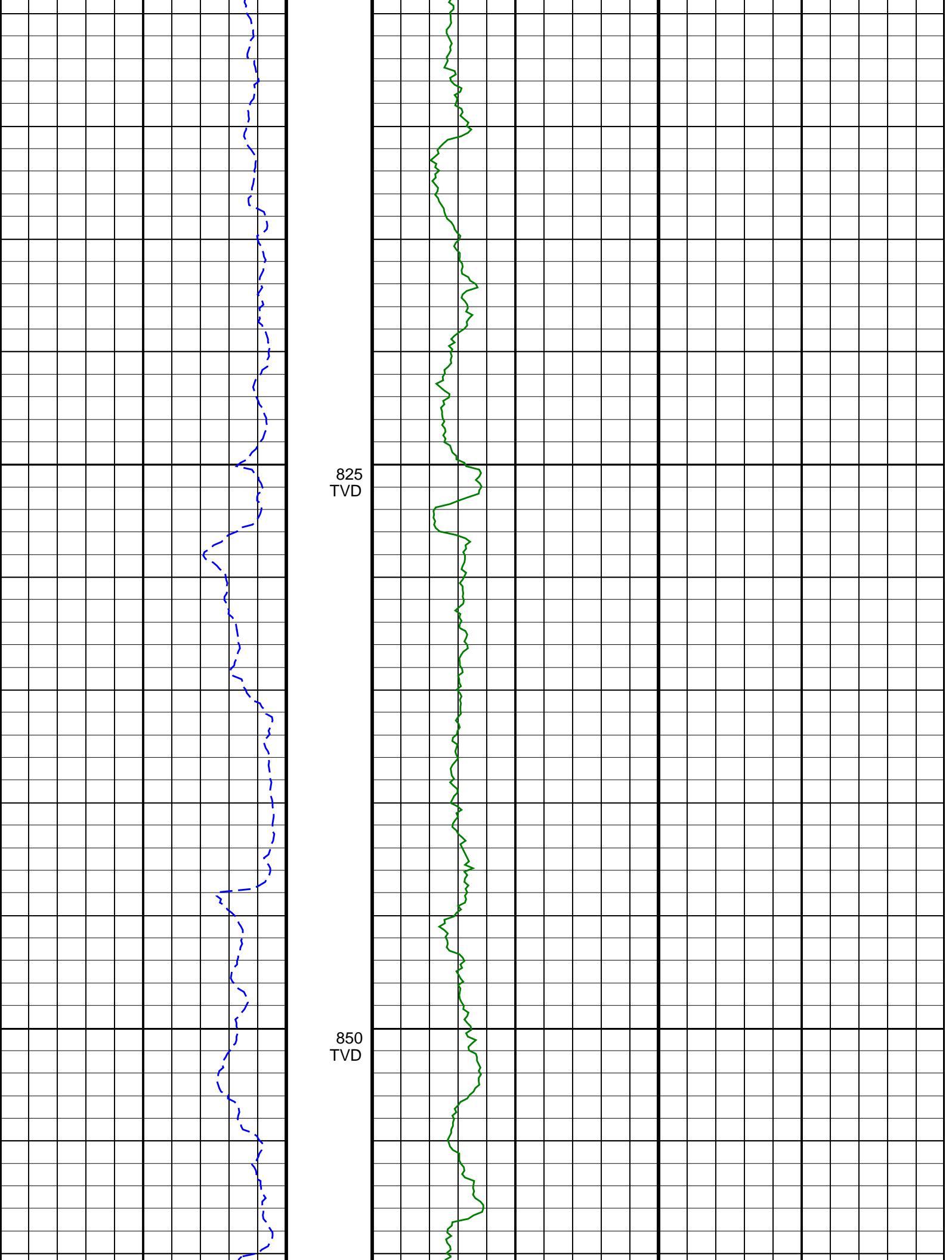
Run number	1								
Bit size	in.	8.5							
Bit start depth	m	844.5							
Bit end depth	m	3142.0							
Top interval logged	m	844.5							
Bottom interval logged	m	3122.6							
Begin log: time		18:30							
Begin log: date		5-Mar-05							
End log: time		14:10							
End log: date		13-Mar-05							
<b>Mud data</b>									
Depth	m	3142.0							
Type		KCl/PHPA/Gly.							
Mud weight	ppg	10.05							
Solids	%	9.4							
Chlorides	mg/L	43,000							
Rm		N/A							
Rmf		N/A							
Rmc		N/A							
Potassium	%	4.2							
<b>Environmental data</b>									
GR									
Mud weight	ppg	10.05							
Bit size	in.	8.5							
<b>Resistivity</b>									
<b>Neutron porosity</b>									
Hole Size									
Mud weight									
Temperature									
Mud salinity									
Formation salinity									
Recording rate 1	SEC	4.14							
Recording rate 2	SEC	N/A							
Filtering GR		3 pt.							
Filtering density		N/A							
Filtering Neutron		N/A							
Company representative	G. Steel	W. Westman	B. Davis	T. Auger					
Anadrill personnel	D. Hastie	L. Johnston	C. Cocks						

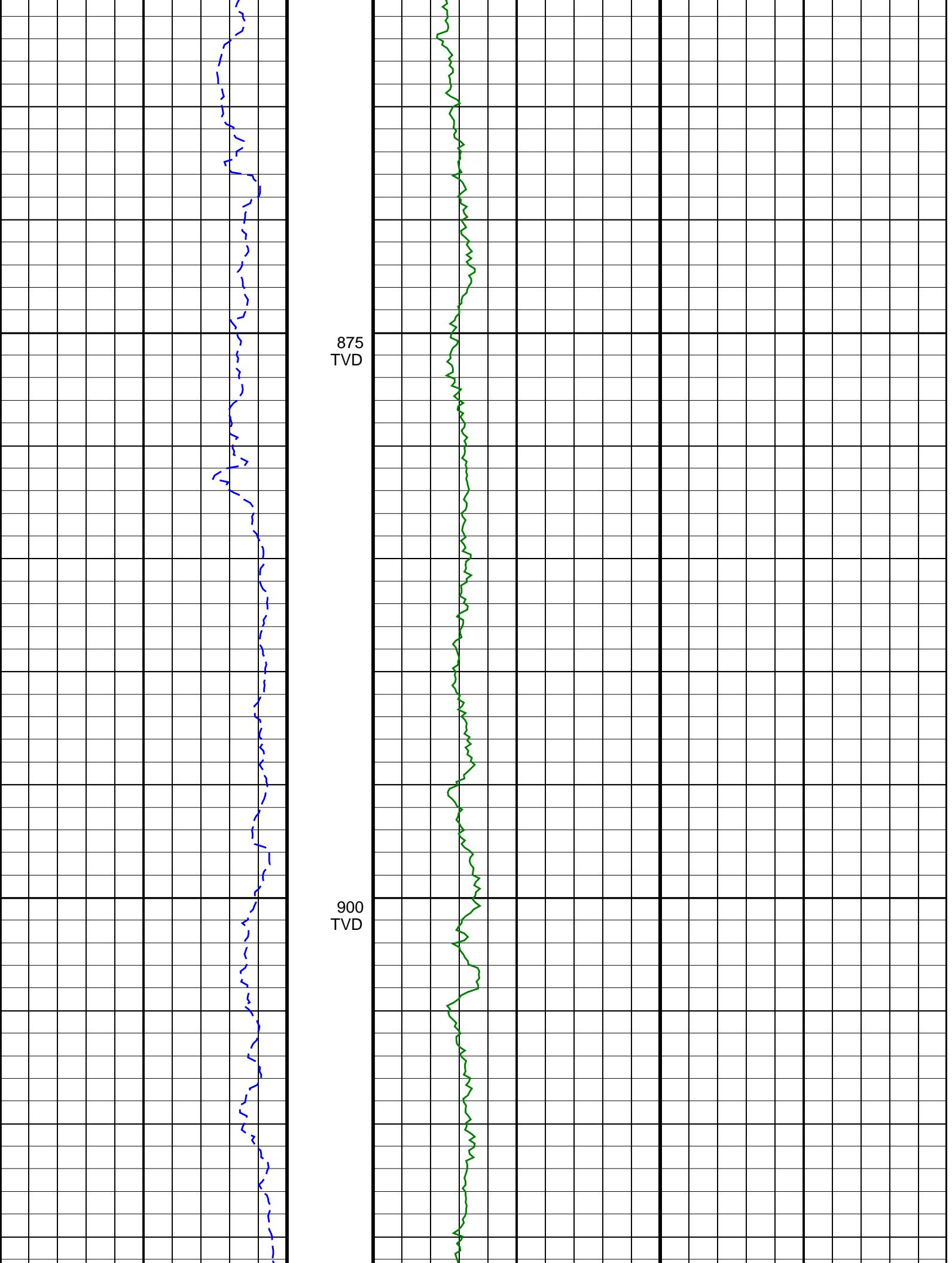
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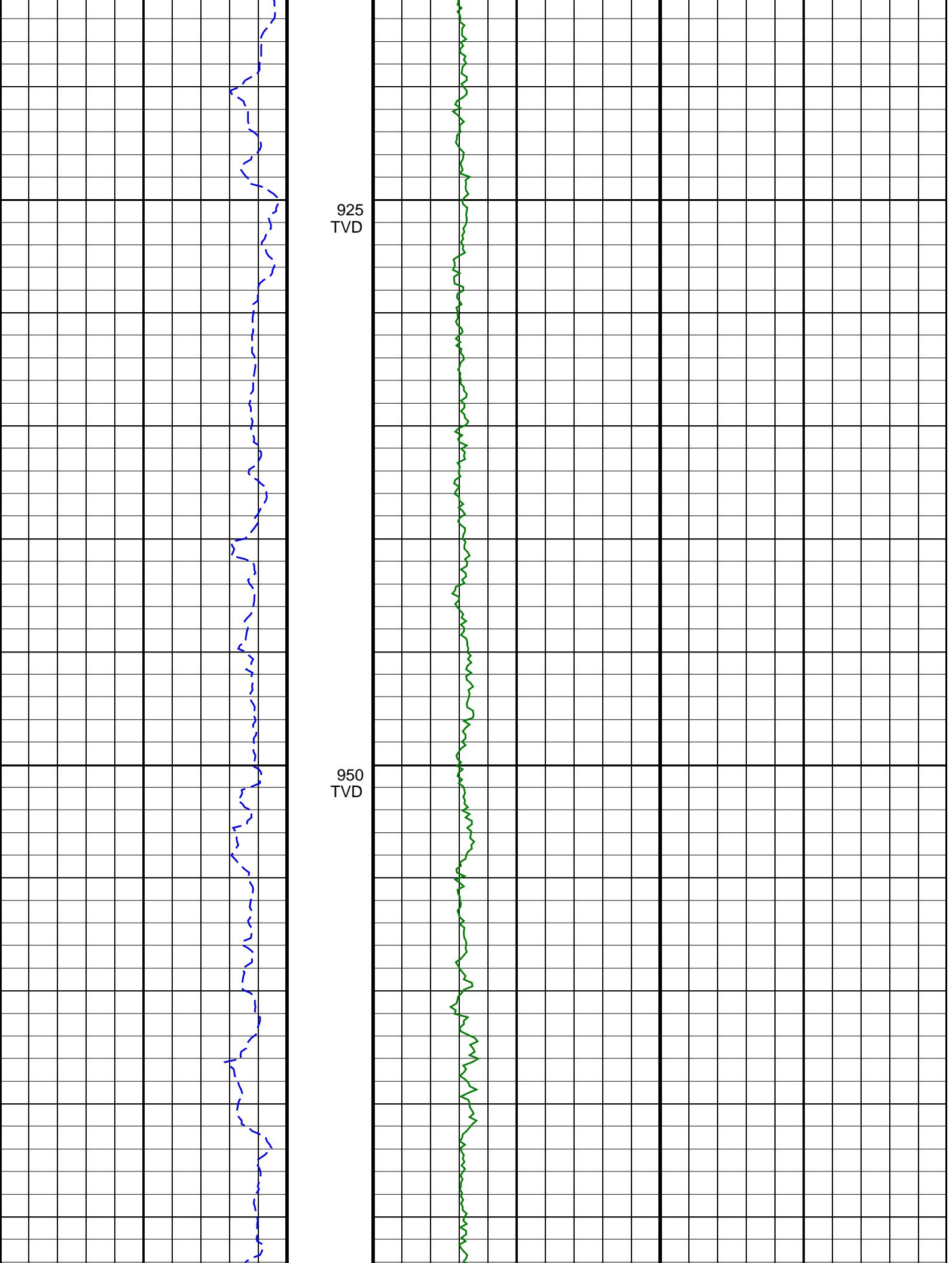
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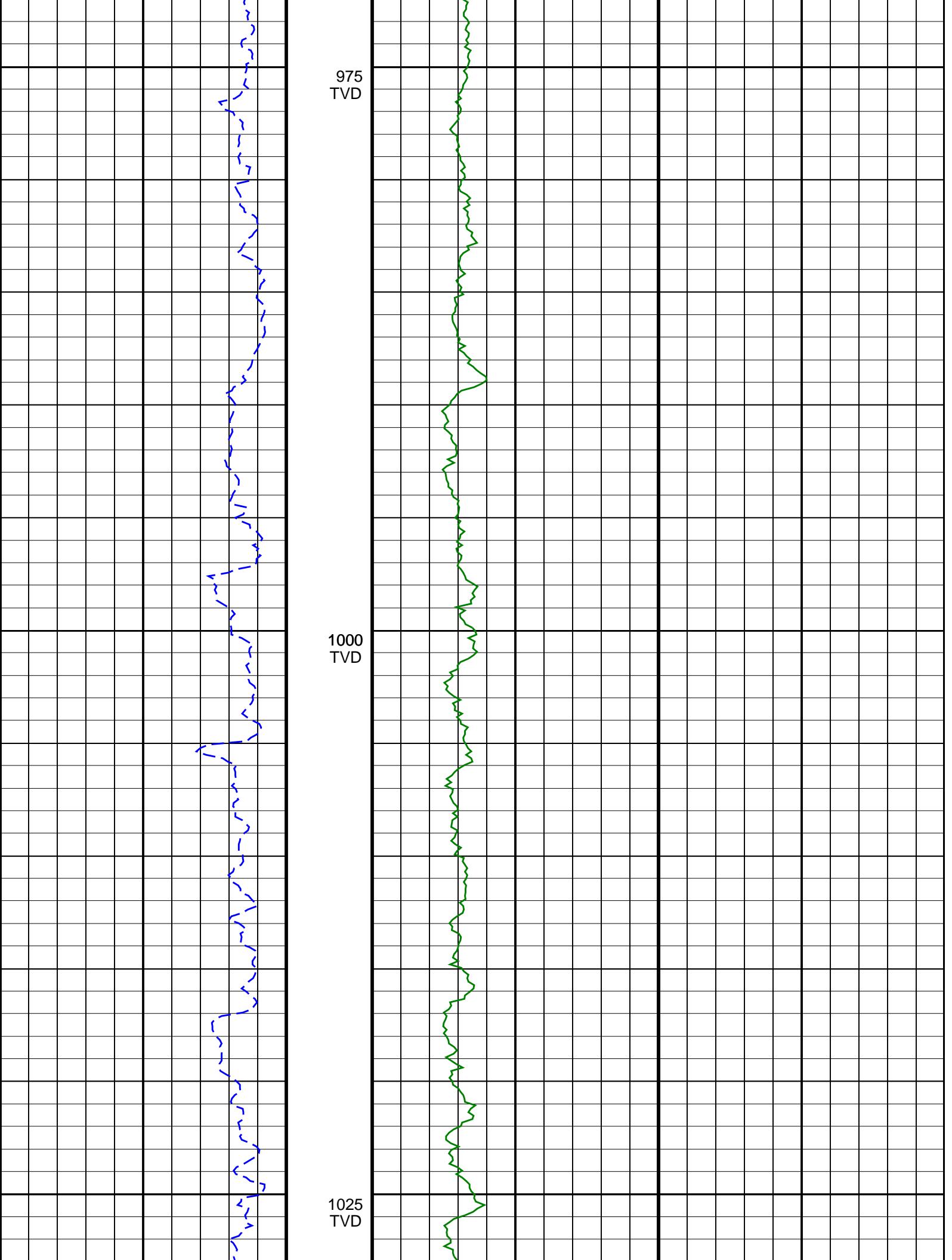
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(M/HR) 0 GR(TM) (GRM1)  
(GAPI) 400

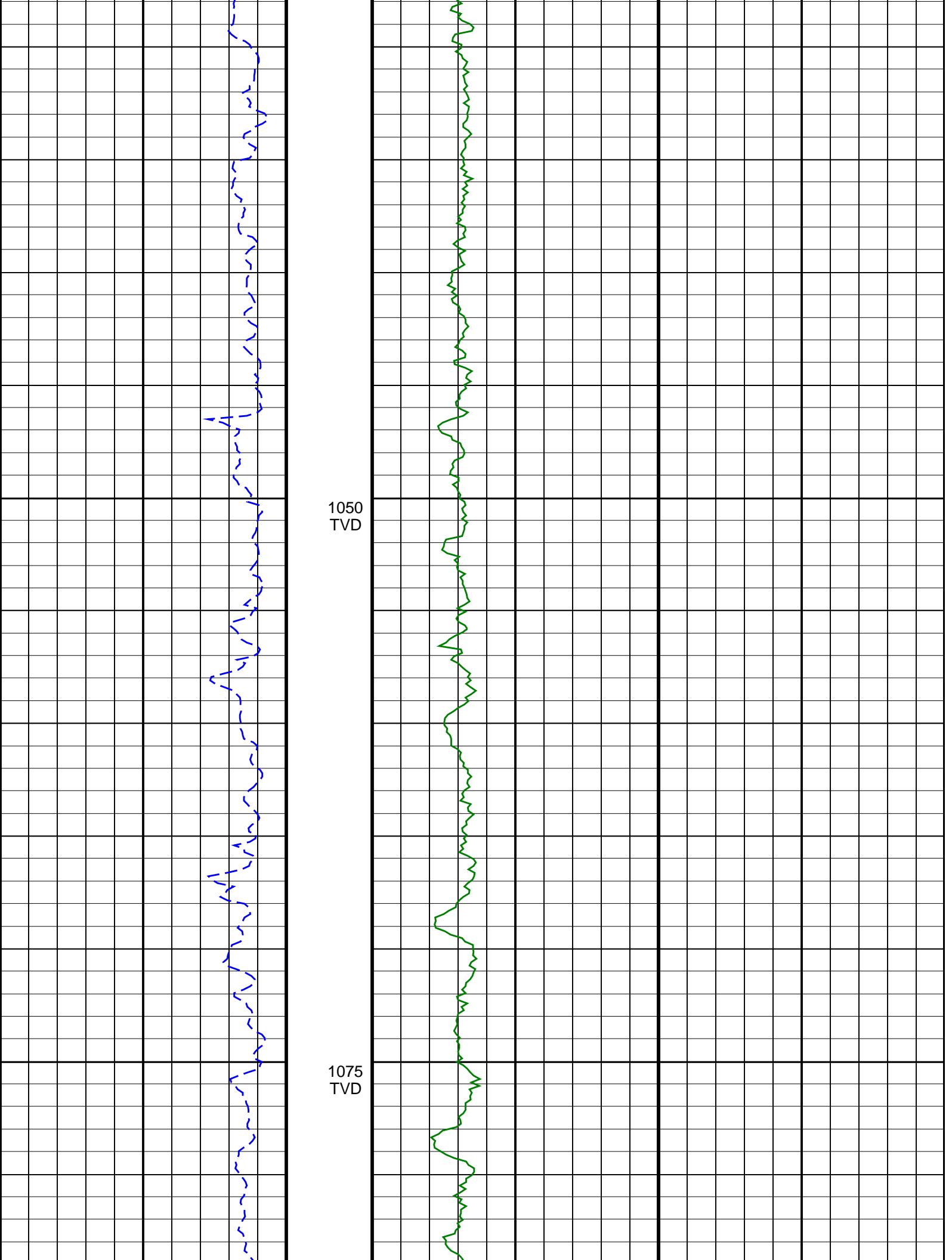


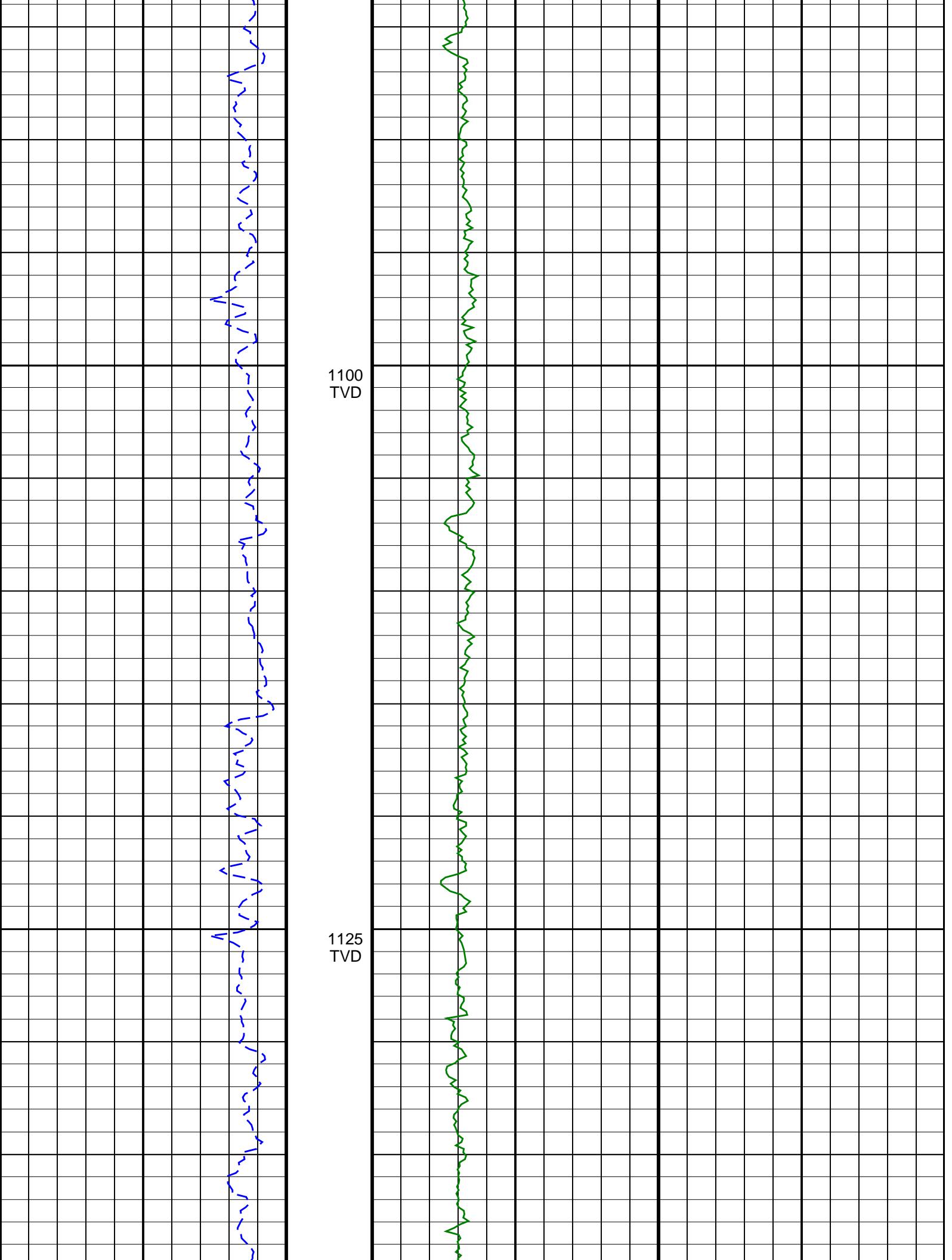


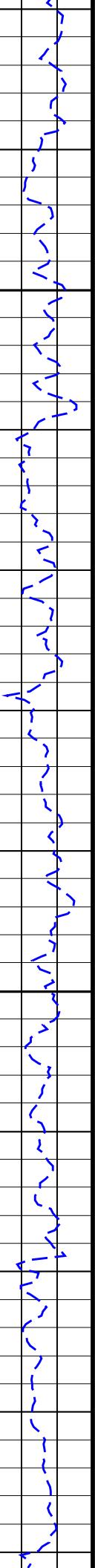




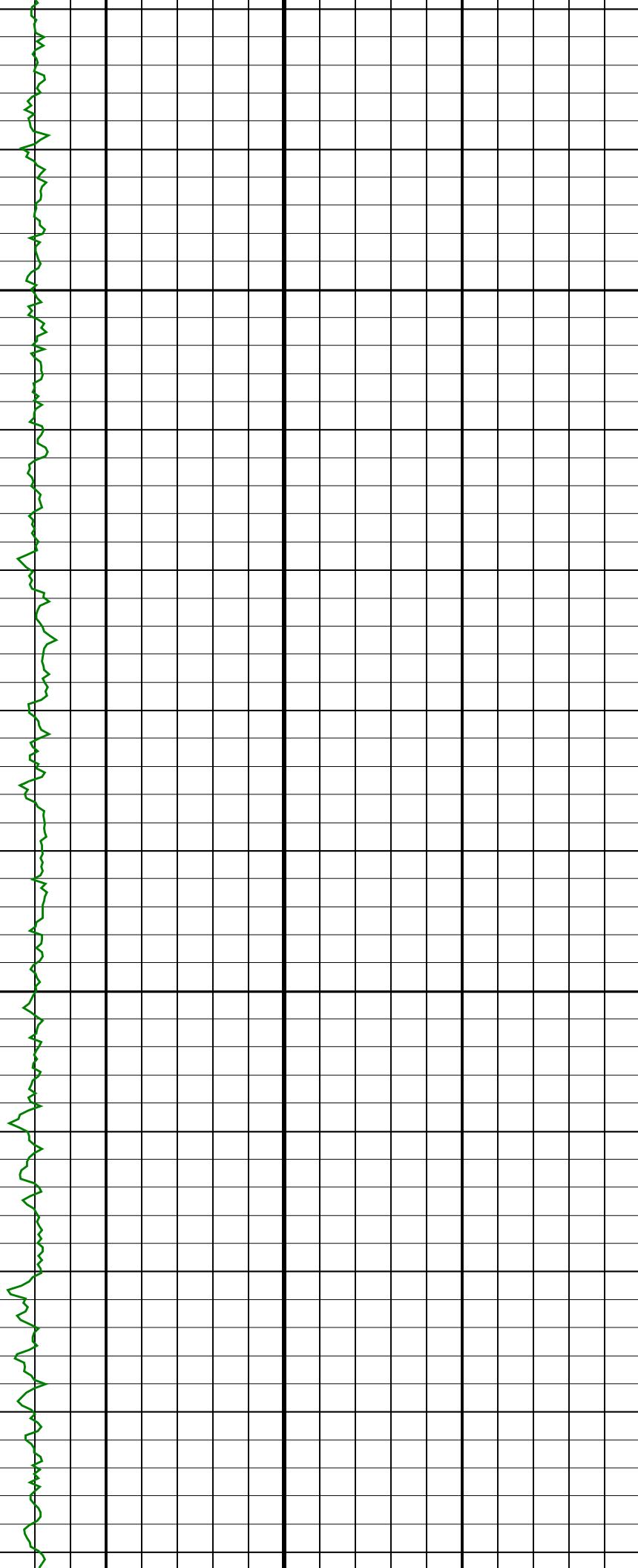




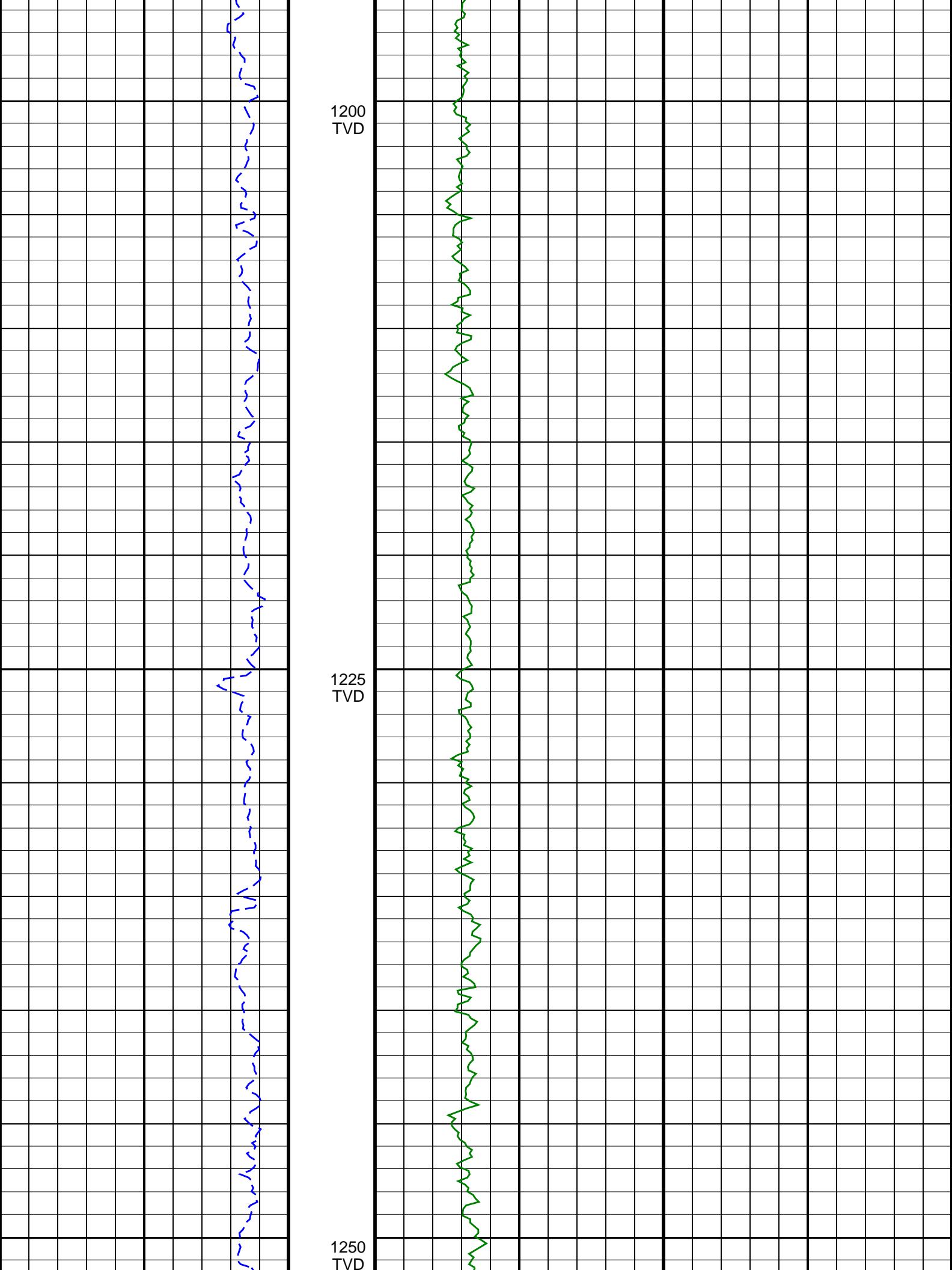


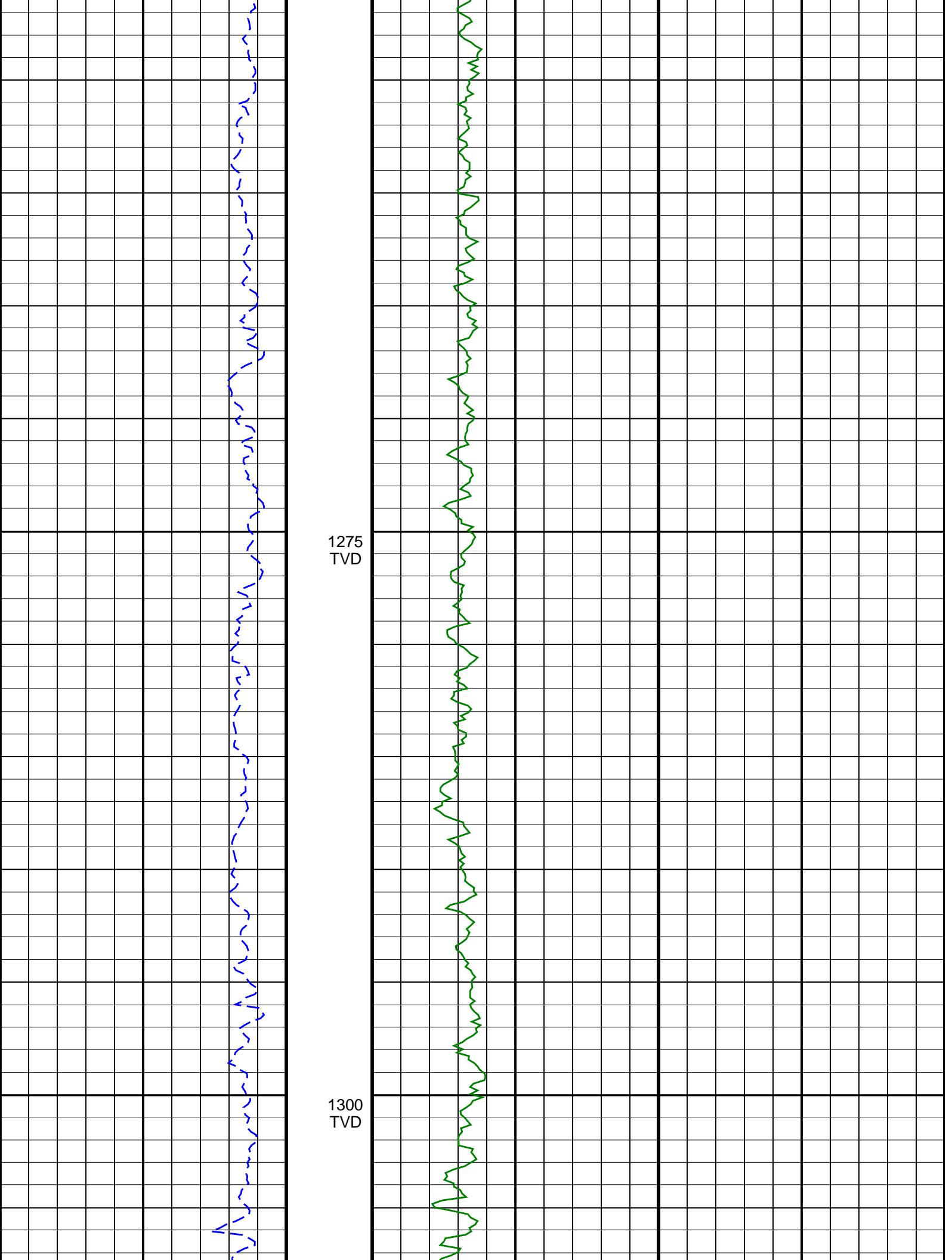


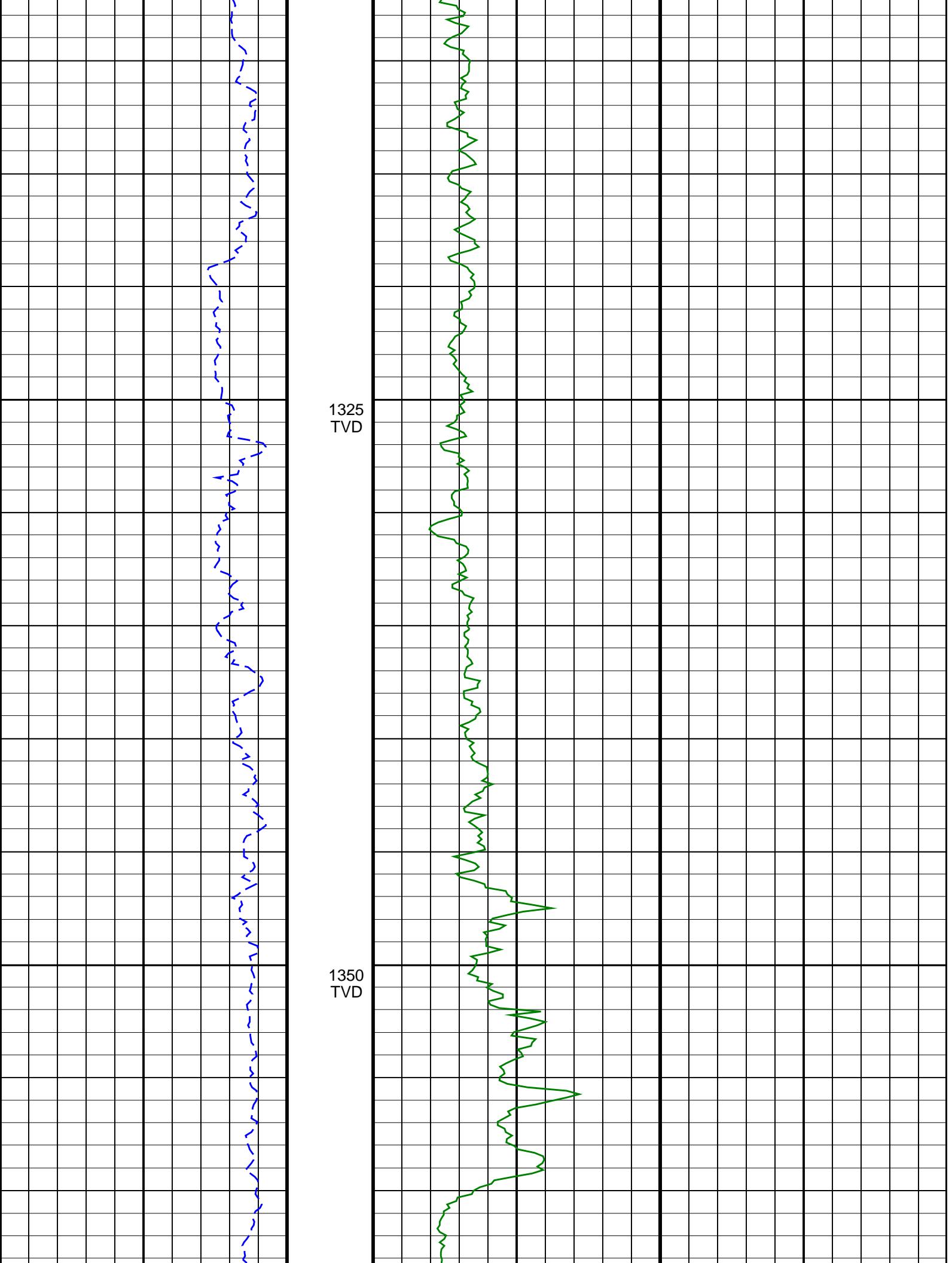
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TVD

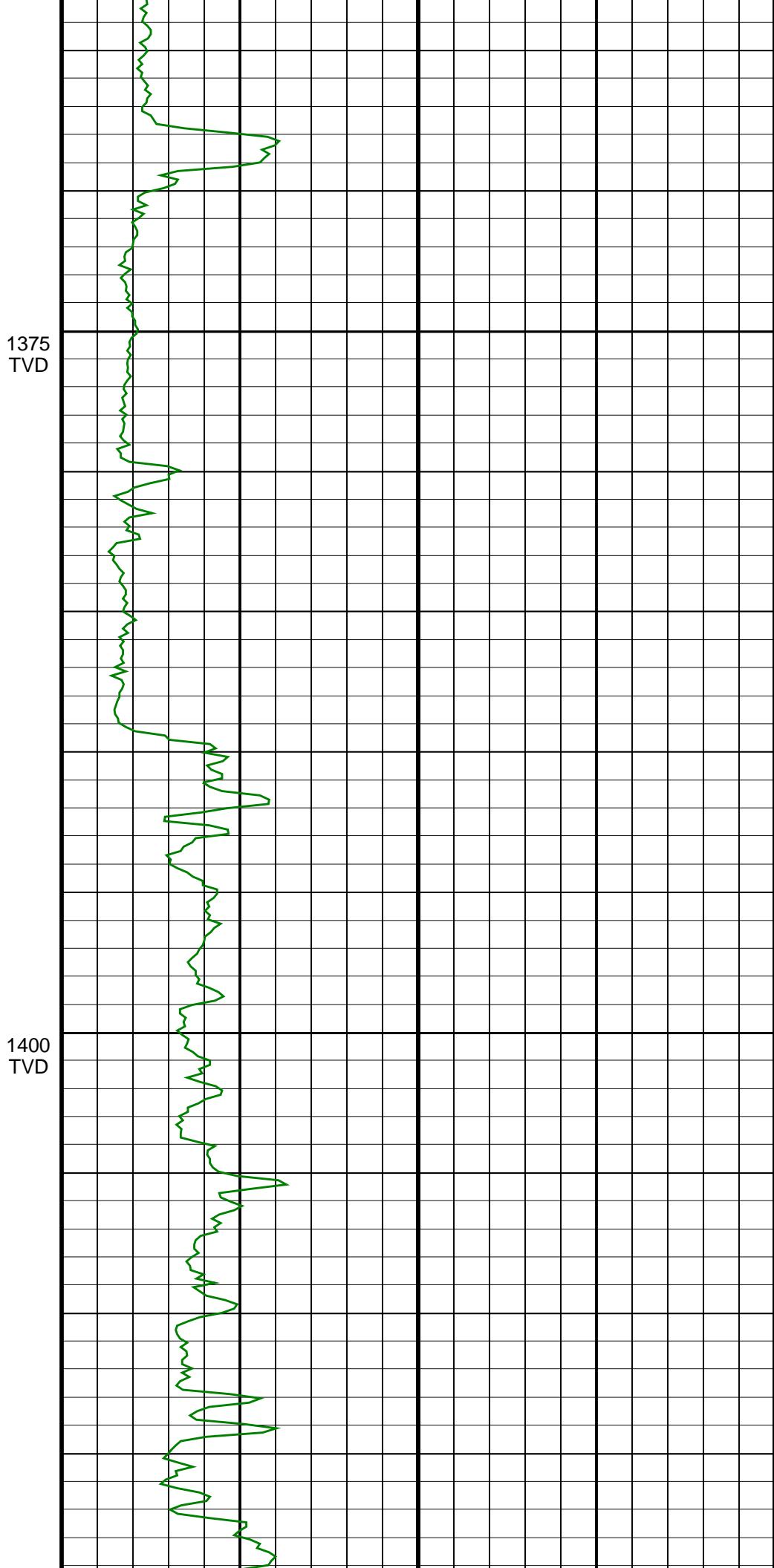
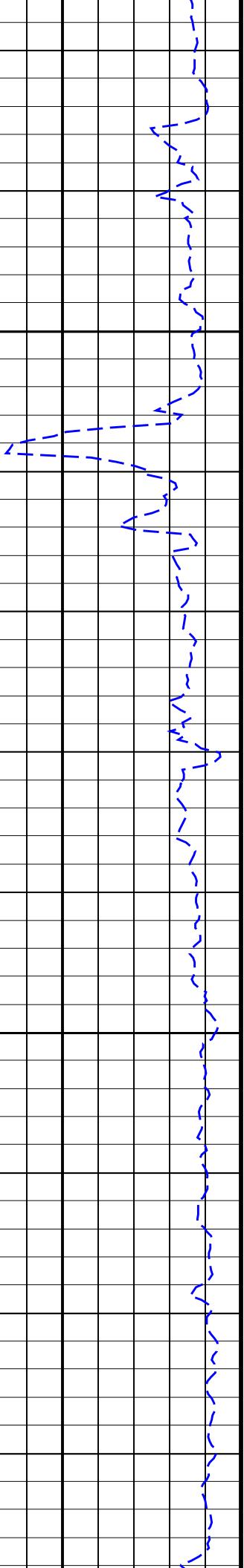


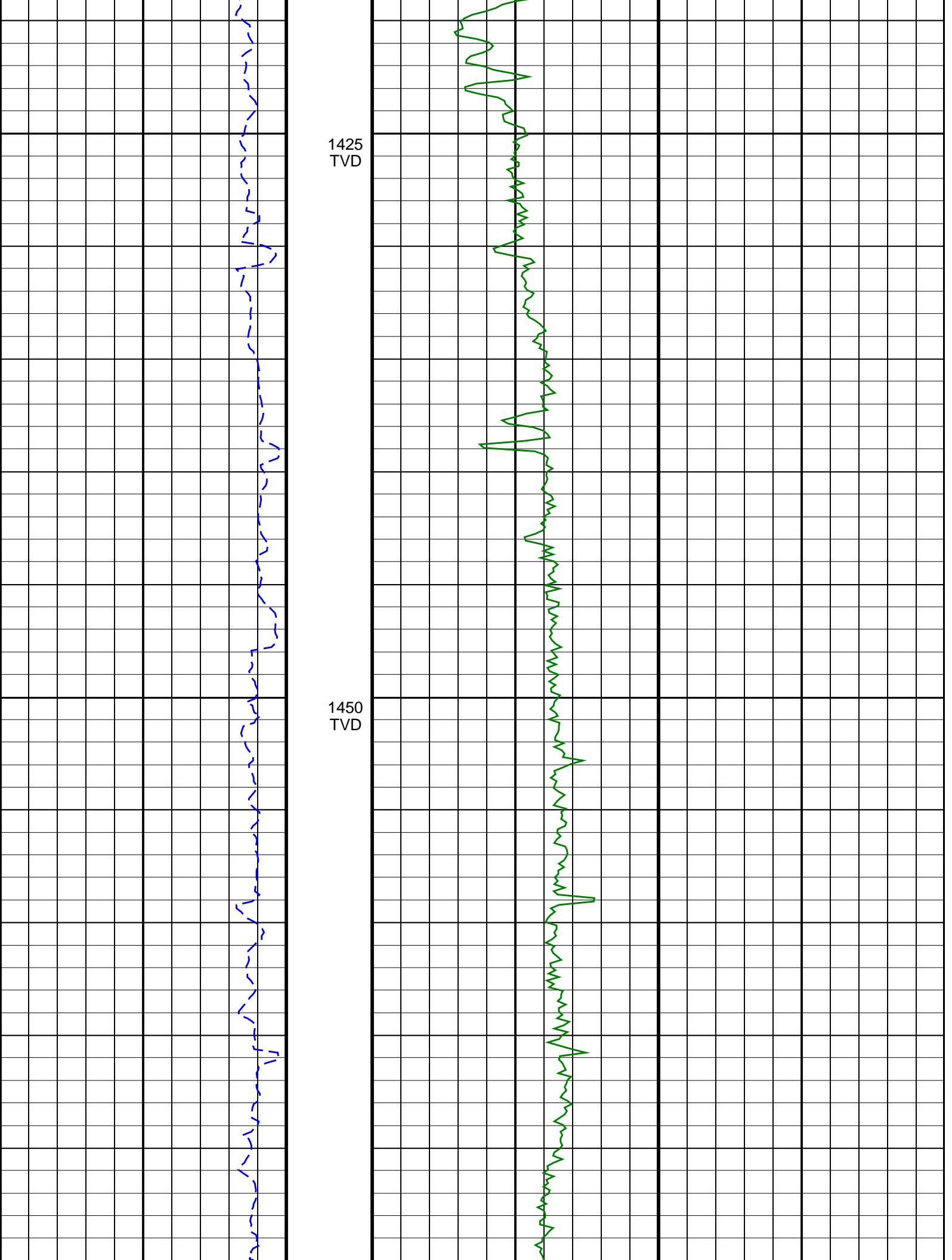
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TVD







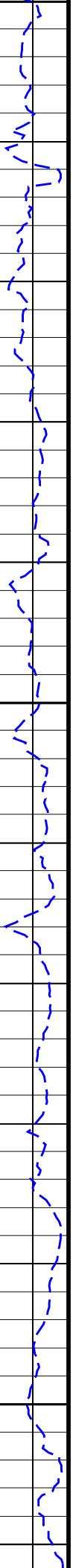


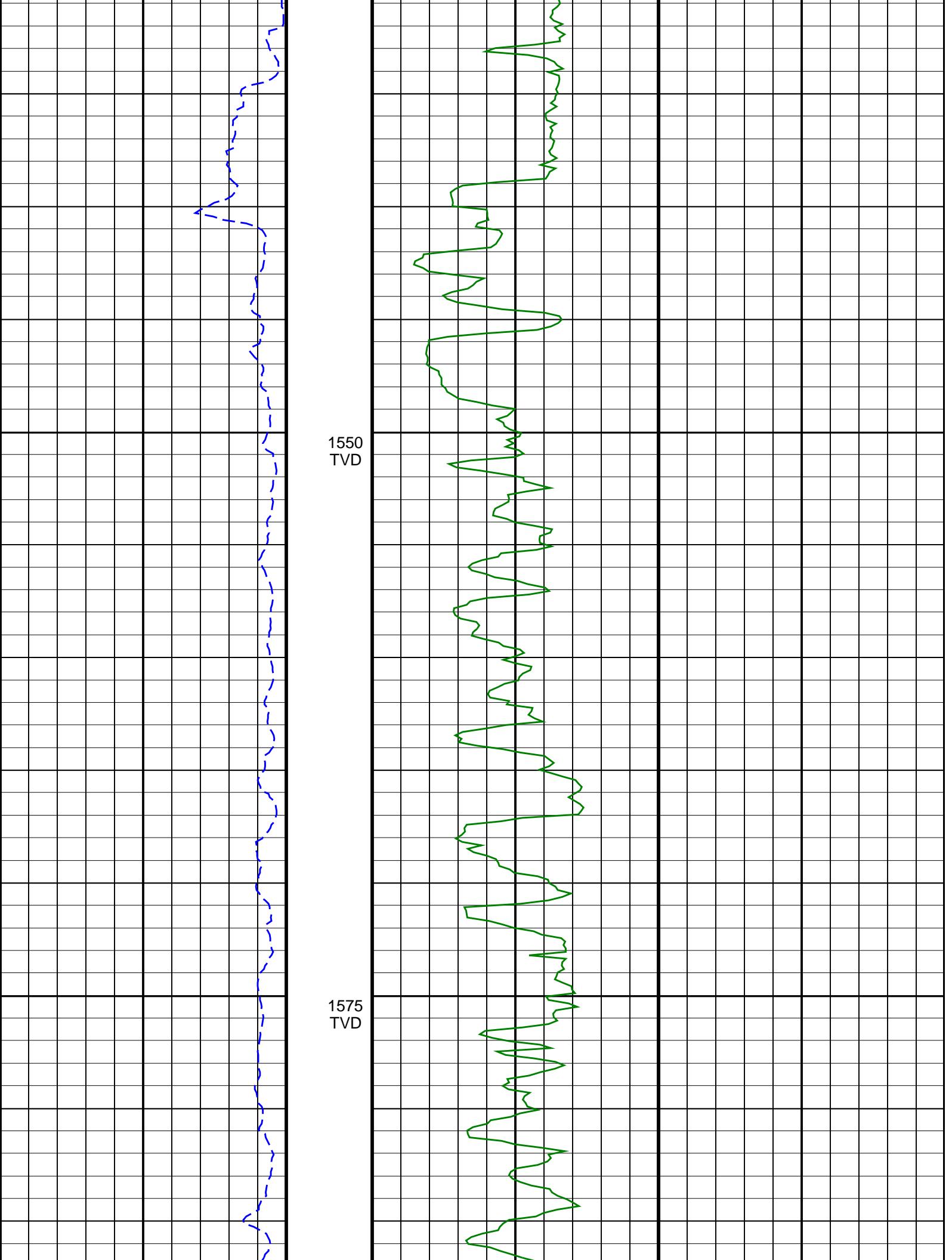


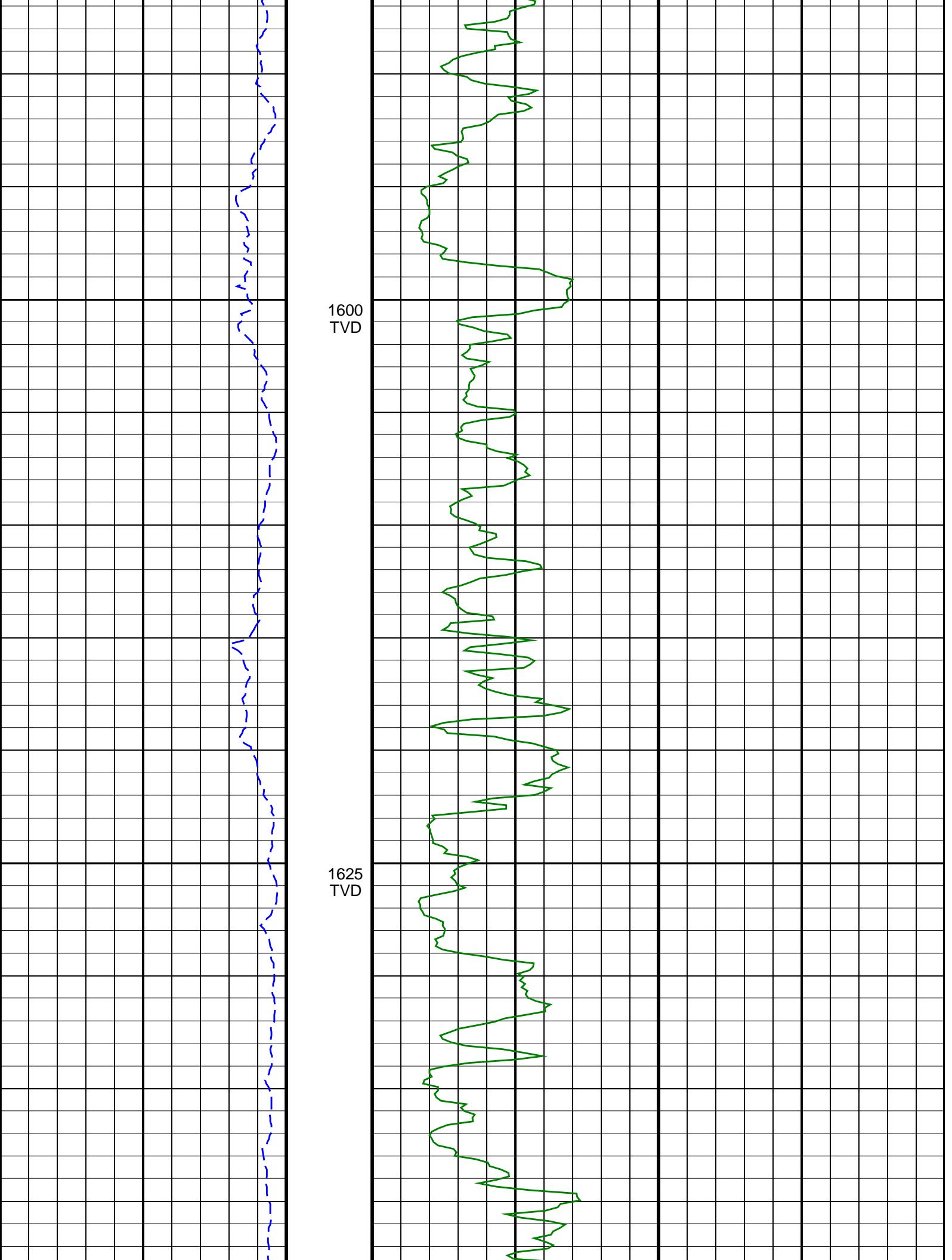
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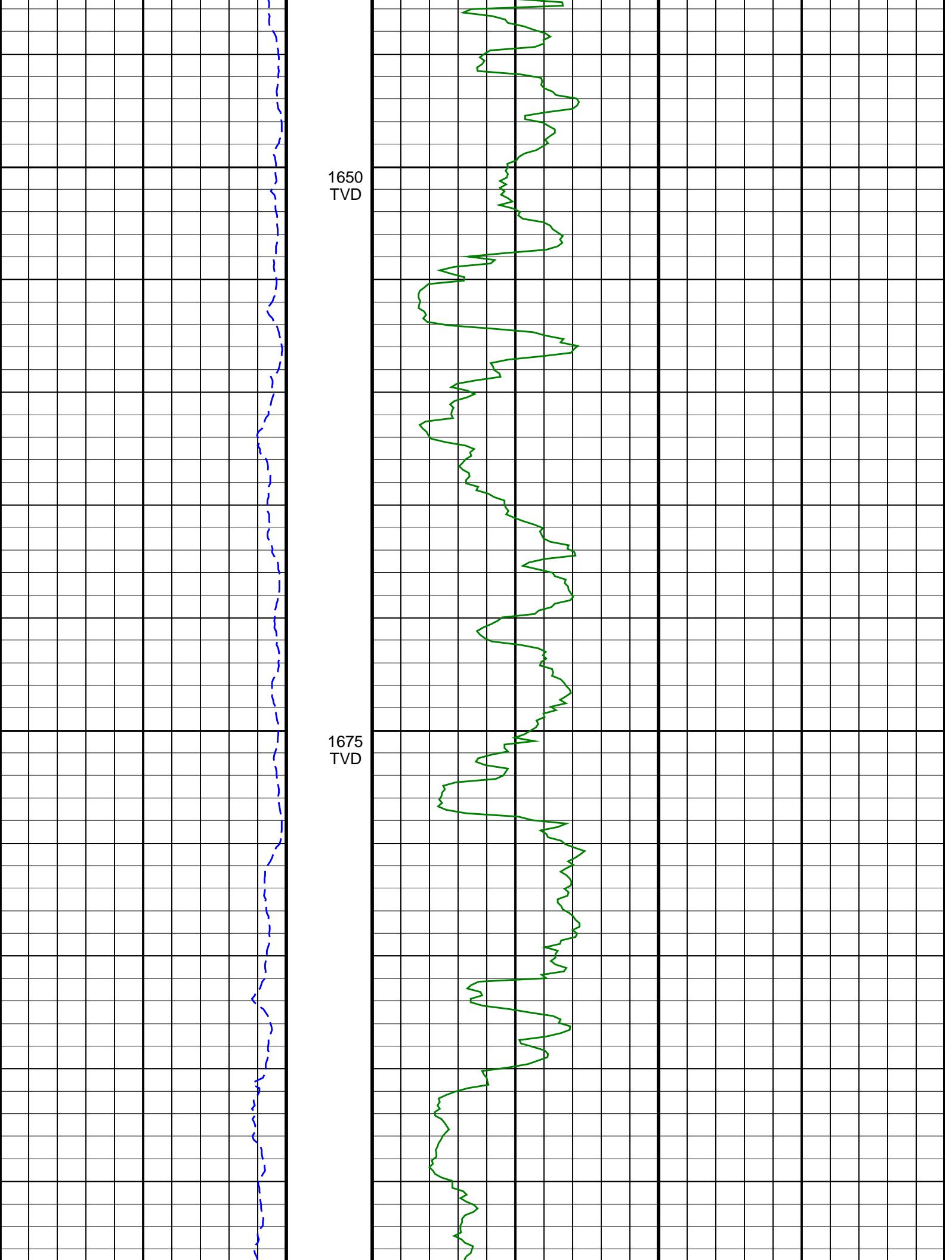
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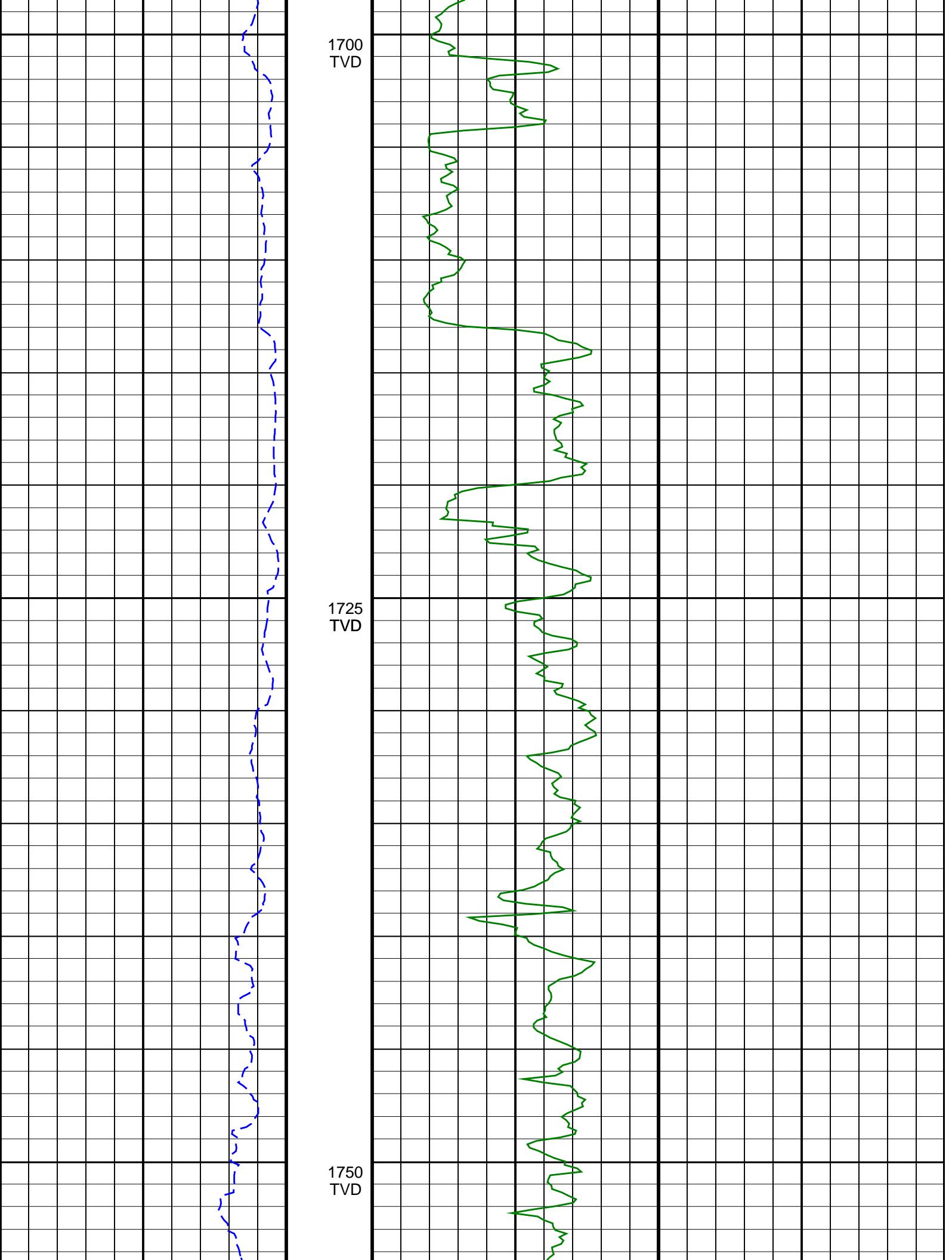
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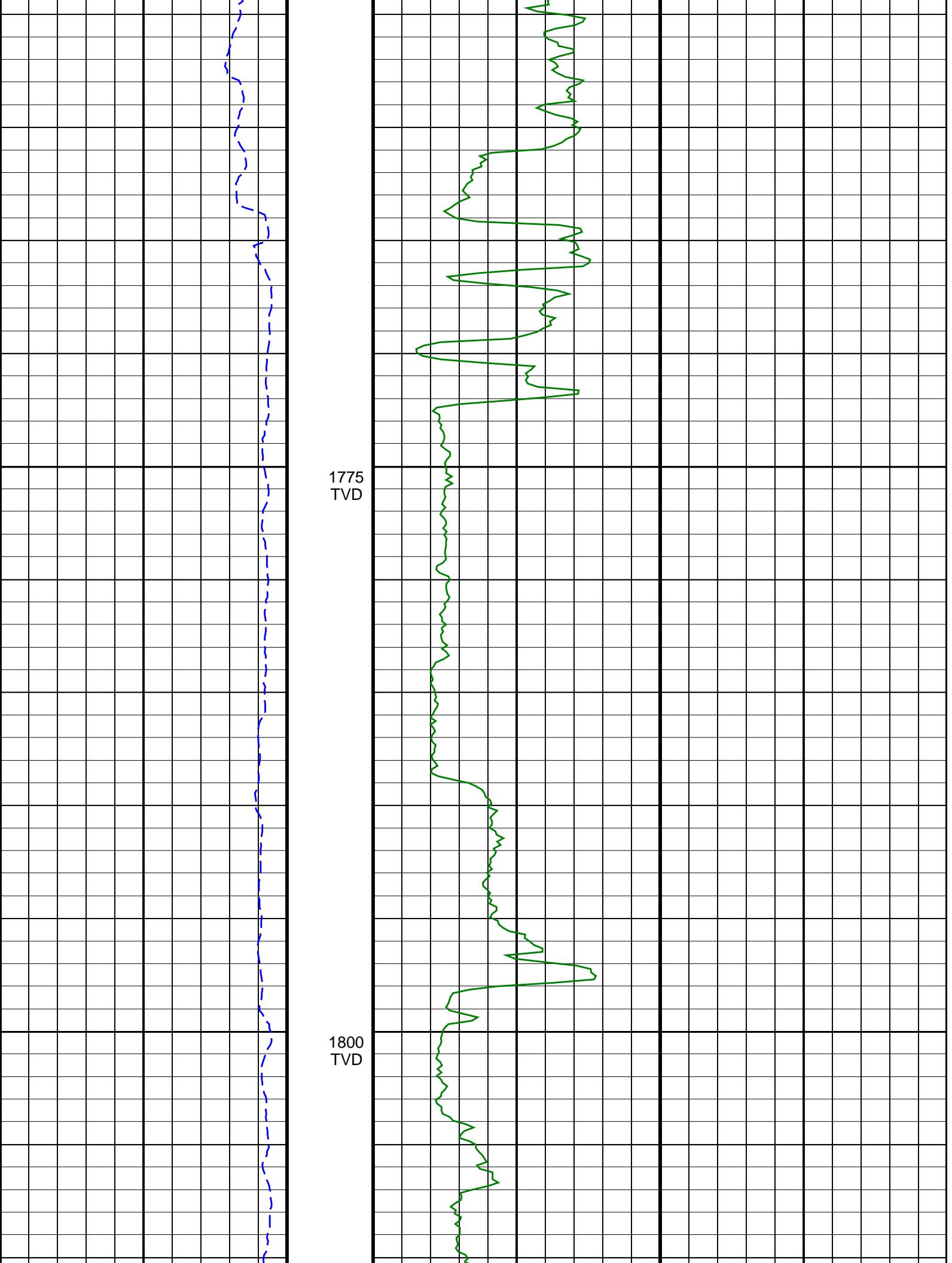


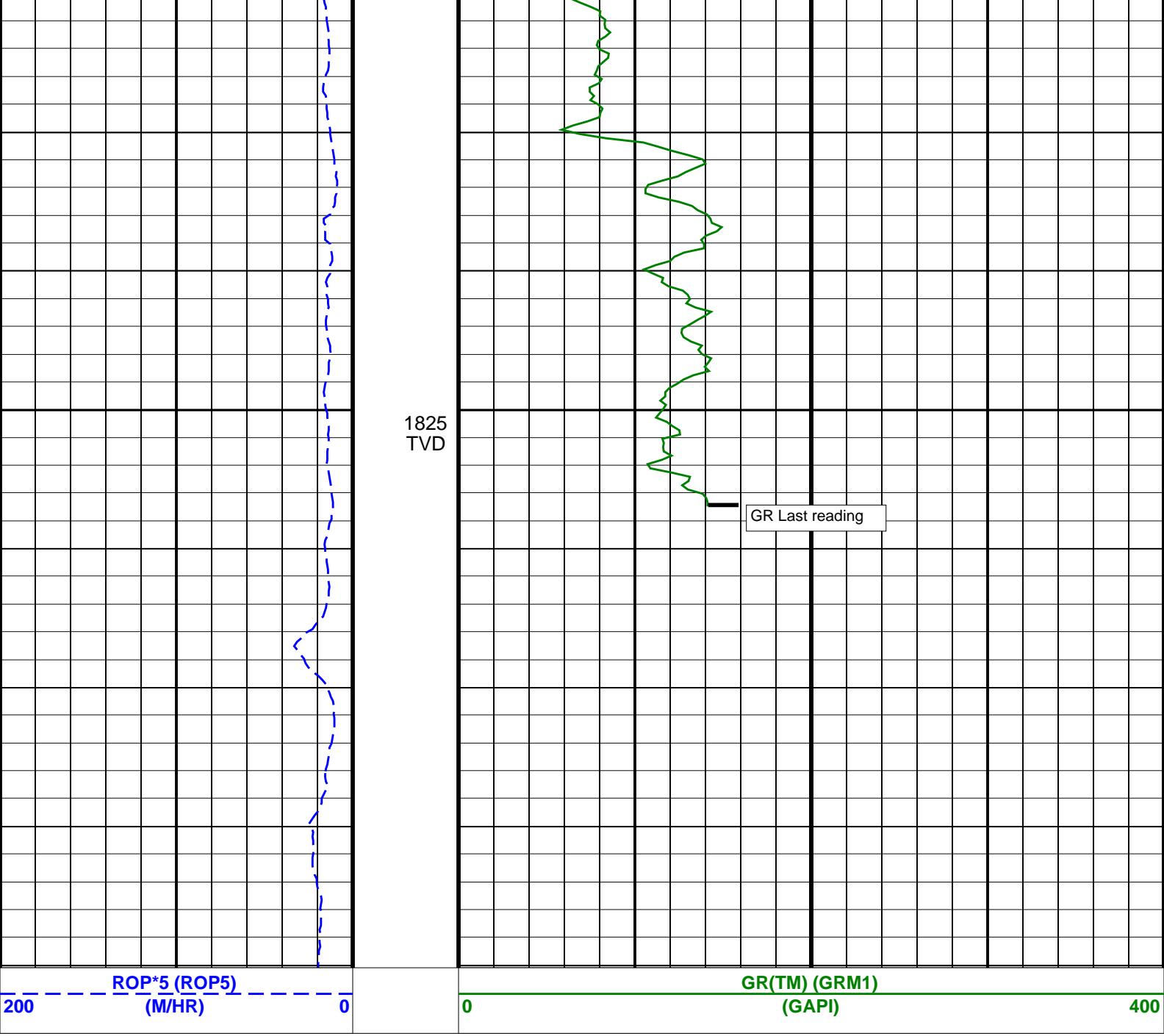












SCHLUMBERGER

Survey report

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

Well.....: TNA A14A  
API number.....: N/A  
Engineer.....: D.Hastie, L.Johnston  
Rig: ISDL 453.....: ISDL 453  
STATE:.....: Victoria

----- Survey calculation methods -----  
Method for positions.....: Minimum curvature  
Method for DLS.....: Mason & Taylor

----- Depth reference -----  
Permanent datum.....: Mean Sea Level  
Depth reference.....: Driller's Depth  
GL above permanent.....: -59.40 m  
KB above permanent.....: TopDrive  
DF above permanent.....: 31.32 m

----- Vertical section origin-----  
Latitude (+N/S-). ....: -2.74 m  
Departure (+E/W-). ....: 8.64 m

----- Platform reference point-----  
Latitude (+N/S-). ....: 5774406.73 m  
Longitude (+E/W-). ....: 164245.91 m

Spud date.....: 04-March-2005  
Last survey date.....: 14-Mar-05  
Total accepted surveys...: 81  
MD of first survey.....: 843.00 m  
MD of last survey.....: 3142.00 m

----- Geomagnetic data -----  
Magnetic model.....: BGGM version 2004  
Magnetic date.....: 01-Mar-2005  
Magnetic field strength..: 1198.15 HCNT  
Magnetic dec (+E/W-). ....: 13.23 degrees  
Magnetic dip.....: -68.65 degrees

----- MWD survey Reference Criteria -----  
Reference G.....: 1000.02 mGal  
Reference H.....: 1198.15 HCNT  
Reference Dip.....: -68.65 degrees  
Tolerance of G.....: (+/-) 2.50 mGal  
Tolerance of H.....: (+/-) 6.00 HCNT  
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----  
Magnetic dec (+E/W-). ....: 13.23 degrees  
Tilt.....: 0.00 degrees

Departure (+E/W).....: 624345.81 m

Azimuth from Vsect Origin to target: 265.87 degrees

Grid convergence (+E/W-): -0.88 degrees  
 Total az corr (+E/W-): 14.11 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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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 (m)	At Azim (deg)	DLS (deg/100f)	Srvy tool type	Tool Corr (deg)
1	843.00	47.28	220.03	0.00	758.68	187.26	-230.69	-162.65	282.26	215.19	0.00	TIP	None
2	904.39	45.25	234.86	61.39	801.24	221.76	-260.59	-195.08	325.52	216.82	5.41	MWD	None
3	932.94	46.21	242.14	28.55	821.18	239.90	-271.25	-212.49	344.57	218.07	5.66	MWD	None
4	961.56	48.15	247.66	28.62	840.64	259.49	-280.14	-231.49	363.41	219.57	4.78	MWD	None
5	990.36	48.81	250.14	28.80	859.74	280.11	-287.90	-251.61	382.35	221.15	2.09	MWD	None
6	1019.18	48.70	250.09	28.82	878.74	300.97	-295.27	-271.99	401.45	222.65	0.12	MWD	None
7	1047.69	50.03	253.45	28.51	897.31	321.94	-302.03	-292.53	420.47	224.09	3.07	MWD	None
8	1076.29	52.44	256.80	28.60	915.22	343.85	-307.74	-314.08	439.72	225.58	3.79	MWD	None
9	1105.25	55.16	260.93	28.96	932.32	367.03	-312.24	-337.00	459.41	227.18	4.53	MWD	None
10	1133.90	59.28	264.13	28.65	947.83	391.07	-315.35	-360.88	479.25	228.85	5.23	MWD	None
11	1162.43	62.50	265.83	28.53	961.71	415.99	-317.53	-385.70	499.59	230.54	3.79	MWD	None
12	1191.18	64.47	268.24	28.75	974.55	441.71	-318.85	-411.39	520.49	232.22	3.10	MWD	None
13	1219.97	66.62	271.12	28.79	986.47	467.85	-318.99	-437.59	541.52	233.91	3.59	MWD	None
14	1248.60	69.79	272.56	28.63	997.10	494.29	-318.13	-464.16	562.72	235.57	3.66	MWD	None
15	1277.32	69.17	272.58	28.72	1007.16	521.00	-316.93	-491.03	584.43	237.16	0.66	MWD	None
16	1306.12	69.56	274.04	28.80	1017.31	547.72	-315.37	-517.94	606.40	238.66	1.50	MWD	None
17	1334.83	70.05	274.73	28.71	1027.23	574.37	-313.31	-544.80	628.47	240.10	0.86	MWD	None
18	1363.85	69.53	274.43	29.02	1037.25	601.29	-311.14	-571.95	651.10	241.45	0.62	MWD	None
19	1392.58	68.71	275.05	28.73	1047.49	627.81	-308.92	-598.70	673.70	242.71	1.07	MWD	None
20	1421.35	69.78	276.09	28.77	1057.69	654.33	-306.31	-625.47	696.45	243.91	1.53	MWD	None
21	1450.10	69.67	276.71	28.75	1067.65	680.84	-303.30	-652.27	719.34	245.06	0.63	MWD	None
22	1478.89	69.16	276.67	28.79	1077.77	707.32	-300.16	-679.04	742.43	246.15	0.54	MWD	None
23	1507.71	69.56	276.63	28.82	1087.93	733.81	-297.04	-705.83	765.79	247.18	0.42	MWD	None
24	1536.23	68.92	277.18	28.52	1098.04	759.99	-293.83	-732.31	789.06	248.14	0.88	MWD	None
25	1564.74	69.96	277.23	28.51	1108.05	786.16	-290.48	-758.79	812.49	249.05	1.11	MWD	None
26	1593.29	70.90	275.73	28.55	1117.61	812.60	-287.45	-785.52	836.46	249.90	1.81	MWD	None
27	1621.92	70.06	275.64	28.63	1127.18	839.19	-284.78	-812.37	860.84	250.68	0.90	MWD	None
28	1650.59	70.56	275.91	28.67	1136.84	865.78	-282.06	-839.22	885.36	251.42	0.60	MWD	None
29	1679.03	69.62	275.89	28.44	1146.53	892.11	-279.31	-865.82	909.76	252.12	1.01	MWD	None
30	1707.84	69.72	275.31	28.81	1156.54	918.74	-276.68	-892.71	934.60	252.78	0.59	MWD	None

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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 (m)	At Azim (deg)	DLS (deg/100f)	Srvy tool type	Tool Corr (deg)
31	1736.55	68.90	275.04	28.71	1166.68	945.24	-274.25	-919.46	959.49	253.39	0.91	MWD	None
32	1765.30	69.06	276.26	28.75	1176.99	971.69	-271.61	-946.16	984.38	253.98	1.22	MWD	None
33	1794.27	69.60	275.64	28.97	1187.22	998.37	-268.80	-973.12	1009.56	254.56	0.83	MWD	None
34	1823.11	69.04	275.44	28.84	1197.40	1024.97	-266.20	-999.98	1034.80	255.09	0.62	MWD	None
35	1852.03	69.53	275.65	28.92	1207.63	1051.64	-263.58	-1026.90	1060.19	255.60	0.56	MWD	None
36	1880.90	69.77	275.83	28.87	1217.67	1078.31	-260.87	-1053.83	1085.64	256.10	0.31	MWD	None
37	1909.68	69.52	275.54	28.78	1227.68	1104.89	-258.20	-1080.68	1111.10	256.56	0.39	MWD	None
38	1938.26	69.13	275.50	28.58	1237.77	1131.25	-255.63	-1107.30	1136.42	257.00	0.42	MWD	None
39	1967.35	69.26	276.18	29.09	1248.11	1158.04	-252.86	-1134.35	1162.19	257.43	0.68	MWD	None
40	1995.91	68.72	276.16	28.56	1258.35	1184.27	-250.00	-1160.86	1187.47	257.85	0.58	MWD	None
41	2024.54	68.39	276.92	28.63	1268.81	1210.46	-246.96	-1187.33	1212.74	258.25	0.83	MWD	None
42	2052.95	70.07	277.52	28.41	1278.89	1236.50	-243.62	-1213.68	1237.89	258.65	1.90	MWD	None
43	2081.73	69.89	277.68	28.78	1288.74	1262.97	-240.05	-1240.49	1263.50	259.05	0.25	MWD	None
44	2110.54	69.42	276.26	28.81	1298.76	1289.48	-236.77	-1267.30	1289.23	259.42	1.49	MWD	None
45	2138.95	68.78	275.98	28.41	1308.89	1315.60	-233.94	-1293.69	1314.67	259.75	0.74	MWD	None
46	2167.43	69.07	276.01	28.48	1319.13	1341.76	-231.16	-1320.12	1340.20	260.07	0.31	MWD	None
47	2196.16	69.34	275.78	28.73	1329.33	1368.21	-228.40	-1346.83	1366.06	260.38	0.37	MWD	None
48	2225.13	69.84	276.05	28.97	1339.44	1394.94	-225.61	-1373.84	1392.24	260.67	0.59	MWD	None
49	2253.85	69.45	275.97	28.72	1349.43	1421.45	-222.79	-1400.62	1418.23	260.96	0.42	MWD	None
50	2282.44	68.89	276.00	28.59	1359.59	1447.75	-220.00	-1427.20	1444.05	261.24	0.60	MWD	None
51	2311.22	68.00	275.66	28.78	1370.17	1474.12	-217.28	-1453.82	1469.97	261.50	1.00	MWD	None
52	2339.17	68.65	275.96	27.95	1380.49	1499.70	-214.65	-1479.66	1495.15	261.75	0.77	MWD	None
53	2368.77	69.10	276.88	29.60	1391.16	1526.84	-211.57	-1507.10	1521.88	262.01	1.00	MWD	None
54	2397.42	69.70	276.63	28.65	1401.24	1553.18	-208.41	-1533.73	1547.83	262.26	0.69	MWD	None
55	2425.56	69.55	276.48	28.14	1411.03	1579.10	-205.40	-1559.94	1573.40	262.50	0.22	MWD	None
56	2454.30	69.27	276.20	28.74	1421.14	1605.56	-202.43	-1586.68	1599.54	262.73	0.41	MWD	None
57	2482.37	69.45	276.06	28.07	1431.04	1631.41	-199.62	-1612.80	1625.10	262.94	0.24	MWD	None
58	2511.08	69.69	275.84	28.71	1441.06	1657.90	-196.83	-1639.56	1651.33	263.15	0.34	MWD	None
59	2539.79	69.40	275.87	28.71	1451.09	1684.39	-194.09	-1666.32	1677.58	263.36	0.31	MWD	None
60	2568.91	69.36	275.81	29.12	1461.35	1711.23	-191.32	-1693.43	1704.20	263.55	0.07	MWD	None

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SCHLUMBERGER Survey Report

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Seq #	Measured depth (m)	Incl angle (deg)	Azimuth (deg)	Course (deg)	TVD length (m)	Vertical depth (m)	Displ section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 100f)	Srvy type	Tool Corr
61	2597.17	69.11	275.50	28.26	1471.36	1737.27	-188.71	-1719.72	1730.05	263.74	0.41	MWD	None	
62	2625.95	69.02	275.27	28.78	1481.65	1763.78	-186.19	-1746.49	1756.38	263.91	0.25	MWD	None	
63	2654.26	66.44	274.97	28.31	1492.38	1789.64	-183.85	-1772.58	1782.09	264.08	2.79	MWD	None	
64	2682.92	63.10	274.75	28.66	1504.59	1815.24	-181.66	-1798.41	1807.56	264.23	3.56	MWD	None	
65	2711.56	61.05	274.81	28.64	1518.00	1840.24	-179.55	-1823.62	1832.44	264.38	2.18	MWD	None	
66	2740.20	57.50	275.87	28.64	1532.63	1864.52	-177.26	-1848.13	1856.61	264.52	3.90	MWD	None	
67	2769.36	52.88	277.77	29.16	1549.28	1888.02	-174.43	-1871.90	1880.01	264.68	5.10	MWD	None	
68	2798.03	49.82	277.78	28.67	1567.18	1909.92	-171.40	-1894.08	1901.82	264.83	3.25	MWD	None	
69	2826.93	47.30	276.02	28.90	1586.31	1931.18	-168.79	-1915.58	1923.00	264.96	3.00	MWD	None	
70	2855.51	44.39	274.85	28.58	1606.21	1951.40	-166.84	-1935.99	1943.17	265.07	3.23	MWD	None	
71	2883.79	41.24	275.02	28.28	1626.96	1970.38	-165.19	-1955.14	1962.10	265.17	3.40	MWD	None	
72	2912.11	38.64	274.19	28.32	1648.67	1988.35	-163.73	-1973.26	1980.04	265.26	2.86	MWD	None	
73	2941.26	35.57	274.11	29.15	1671.91	2005.75	-162.46	-1990.80	1997.41	265.33	3.21	MWD	None	
74	2970.11	32.14	274.48	28.85	1695.87	2021.64	-161.26	-2006.82	2013.29	265.41	3.63	MWD	None	
75	2998.82	29.63	274.67	28.71	1720.50	2036.21	-160.08	-2021.51	2027.84	265.47	2.67	MWD	None	
76	3027.33	29.25	274.48	28.51	1745.33	2050.06	-158.96	-2035.48	2041.68	265.53	0.42	MWD	None	
77	3055.52	29.04	274.60	28.19	1769.95	2063.63	-157.88	-2049.16	2055.24	265.59	0.24	MWD	None	
78	3084.06	29.42	274.47	28.54	1794.86	2077.41	-156.77	-2063.06	2069.01	265.65	0.41	MWD	None	
79	3112.84	29.69	274.29	28.78	1819.89	2091.45	-155.69	-2077.21	2083.04	265.71	0.30	MWD	None	
80	3121.10	29.93	274.33	8.26	1827.06	2095.51	-155.38	-2081.31	2087.10	265.73	0.89	MWD	None	
81	3142.00	29.97	274.40	20.90	1845.17	2105.84	-154.58	-2091.72	2105.84	265.77	0.08	Projection to TD		

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

**Schlumberger**

Well: **TNA A14A**

Field: **Tuna**

Rig: **ISDL 453**

State: **Victoria**

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