

Bit Run Summary

[illegible]

Type		KCl/PHPA/GLYC.									
Mud weight	ppg	9.75									
Solids	%	7.4									
Chlorides	ppm	36,500									
Rm											
Rmf											
Rmc											
Potassium	ppm	40,794									
Environmental data											
GR											
Mud weight	ppg	9.75									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size											
Mud weight											
Temperature											
Mud salinity											
Formation salinity											
Recording rate 1	SEC										
Recording rate 2	SEC										
Filtering GR		3 pt.									
Filtering density											
Filtering Neutron											
Company representative		R. Morris	B. Davis	B. Steel	B. Sutherland						
Anadrill personnel		K. Handley	D. Hastie	C. Cocks	B. Manjenic	T. Auger					

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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 549.5 m to 3473.5 m. Depth is referenced to the Driller's Depth. Gamma Ray is corrected for Tool Size, Bit Size and Mud Weight. Mud type is KCl/PHPA/Glycol. POOH due to TD of HLA A6A.	REMARKS: RUN NUMBER	REMARKS: RUN NUMBER

Thank You for Choosing Schlumberger.

EQUIPMENT DESCRIPTION

RUN1

DOWNHOLE EQUIPMENT

6-3/4 in. PowerPulse* 22.66

MDC: 06
MEC: 61
MDI: 626
MGR: 29
DH Software:

D&I 18.37
GR 17.72

6-1/2 in. PMDC 14.45

S/N: ASS1

6-5/8 in. NM Roller Reamer 12.76

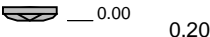

S/N: 411W
Reamer OD:

6-1/2 in. PMDC 10.58

S/N: 961

6-3/4 in. PowerPak* Motor 7.89

A675XP
S/N: 14
1.5 deg. b
8-3/8 in. Moto



Smith PDC Bit

8-1/2 in
S75HPX S/N

Maximum string diameter 8.50 in.
All lengths in Meters

HLA A6A GR 1:500 TVD

IDEAL Version: ID8_1C_01 <TVD> Vertical Scale: 1:500

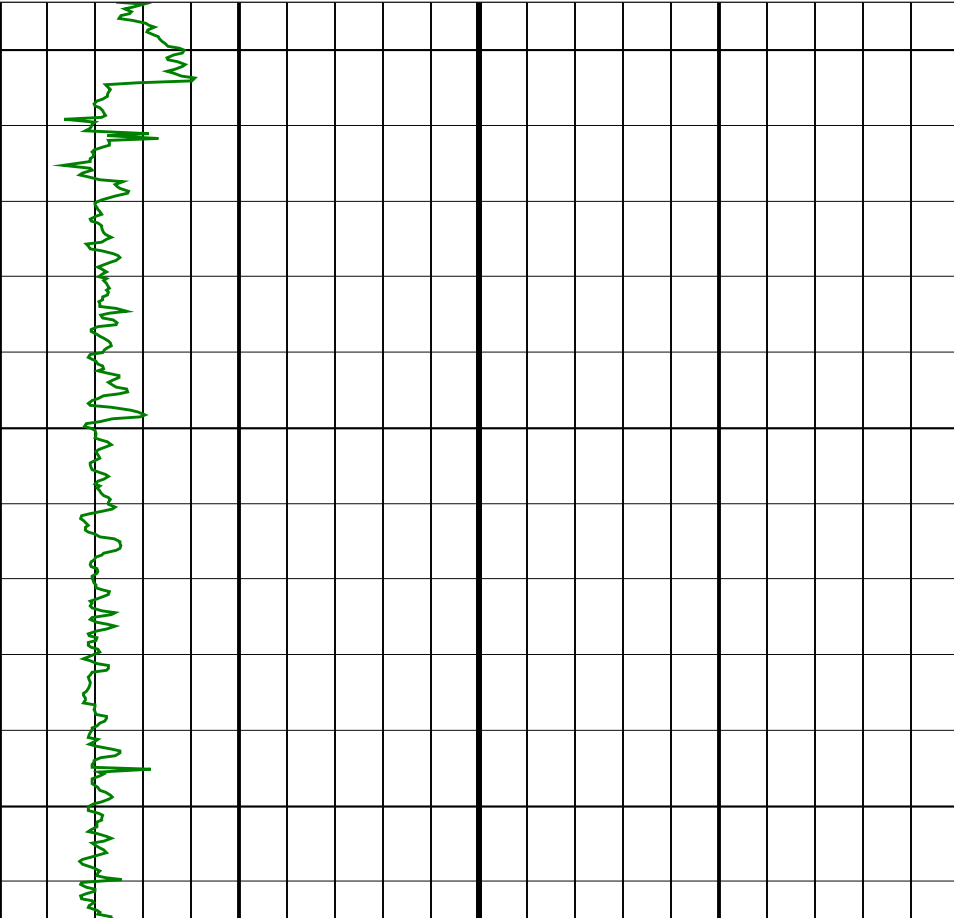
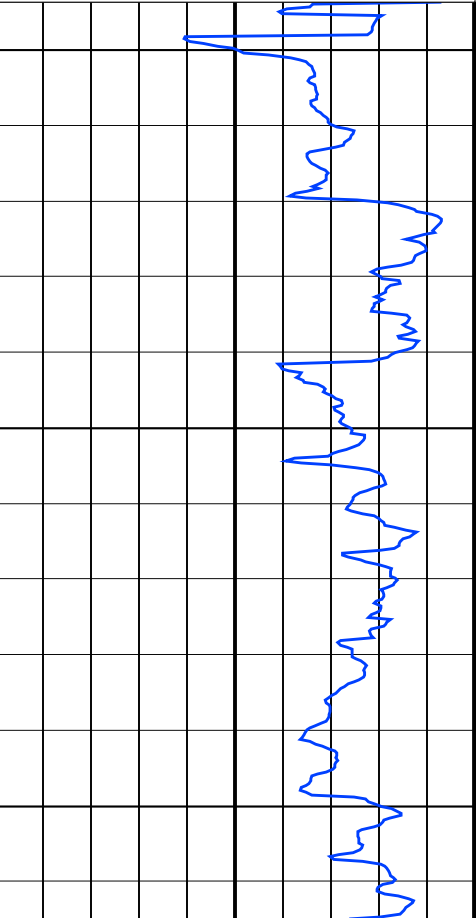
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ROP*5 (ROP5)

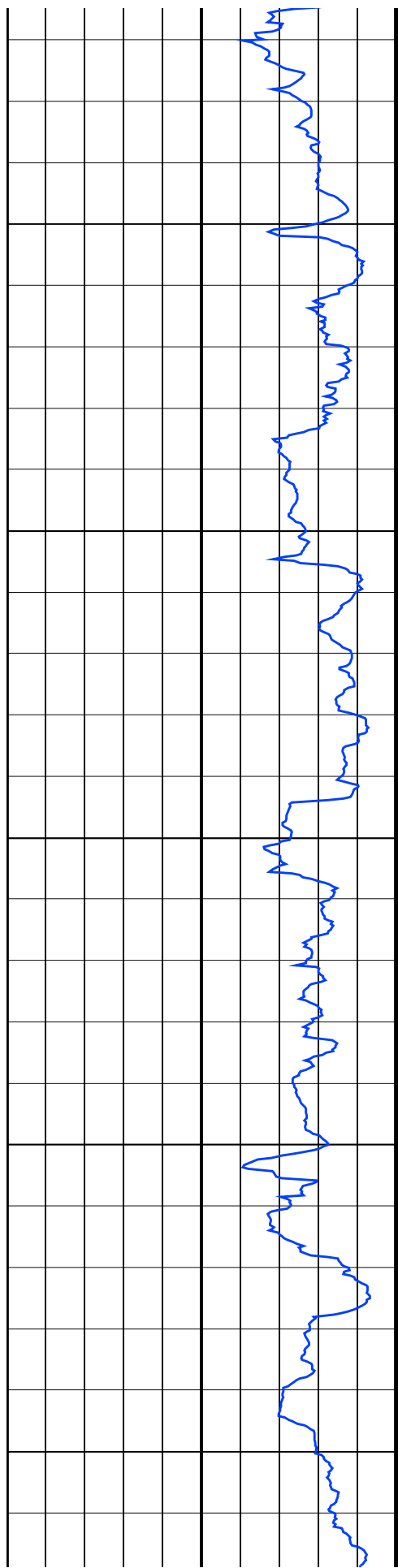
200 (M/HR) 0

GR(TM) (GRM1)

0 (GAPI) 400



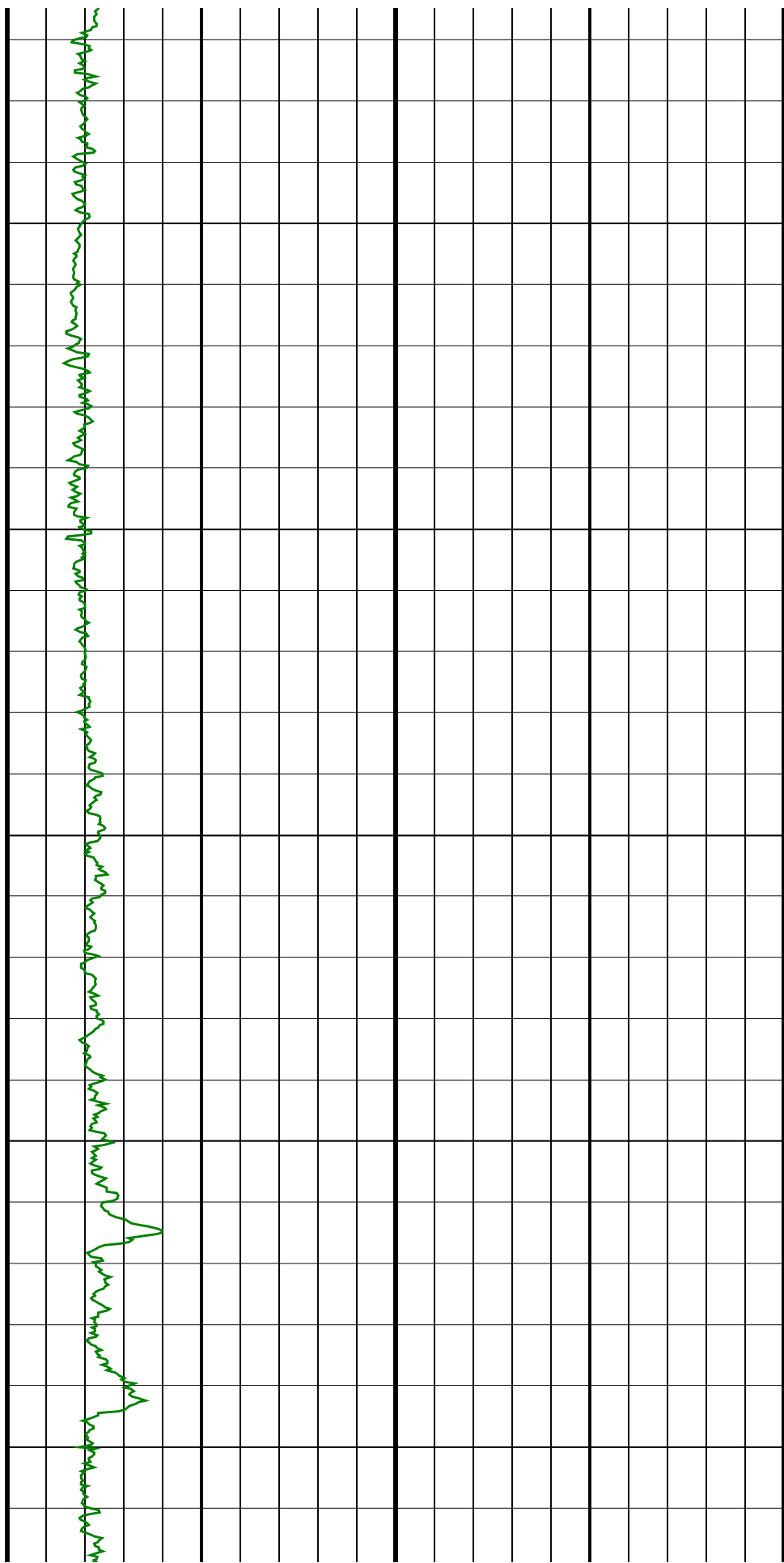
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TVD

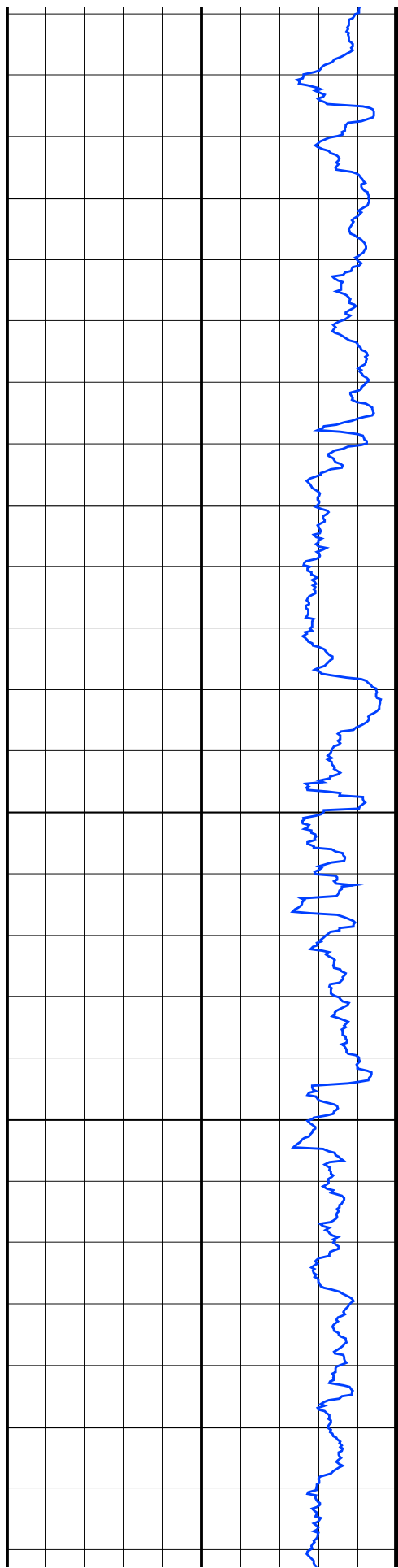


650
TVD

700
TVD

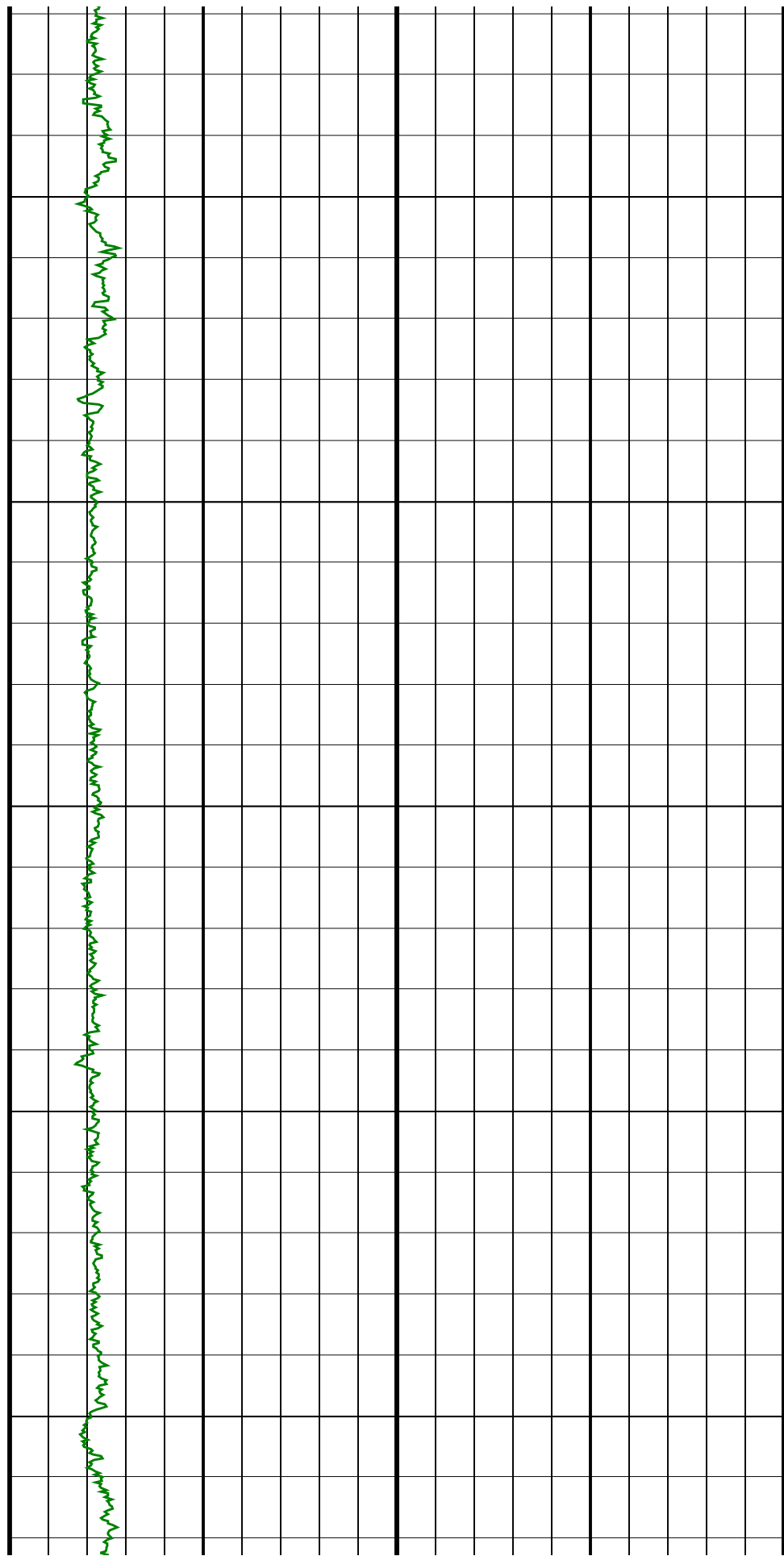
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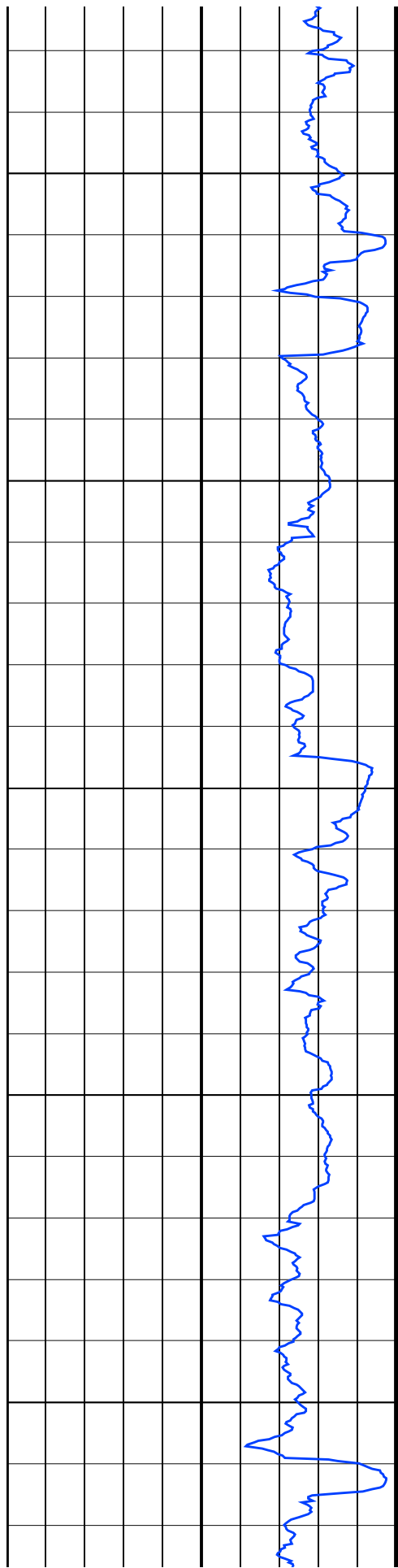




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TVD

850
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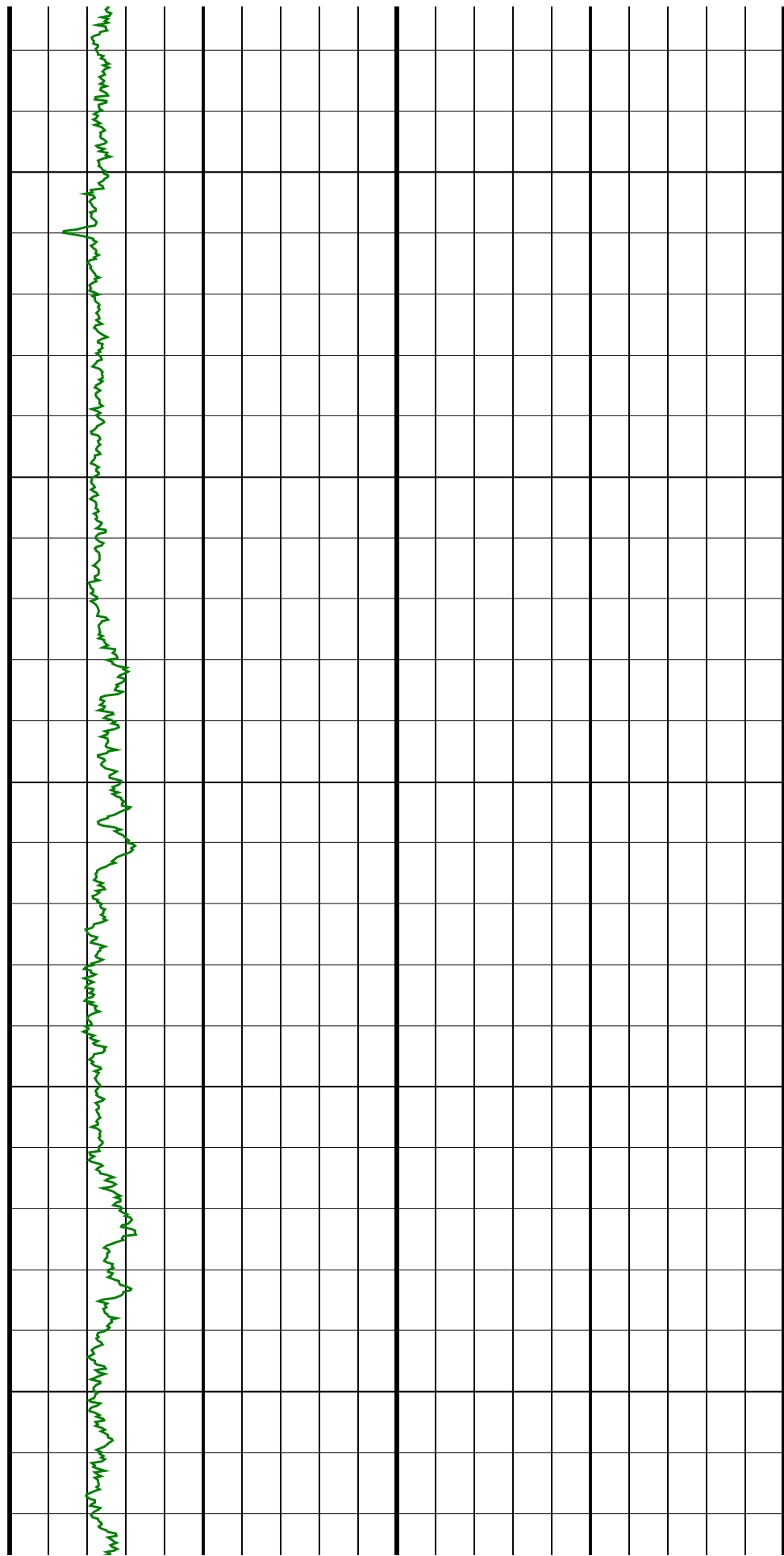


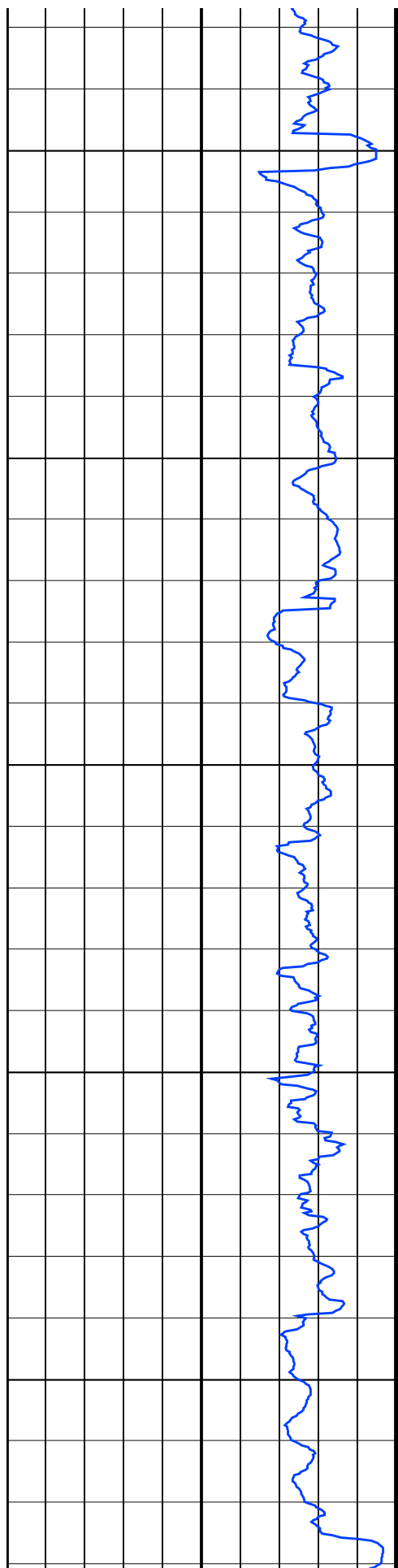


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TVD

950
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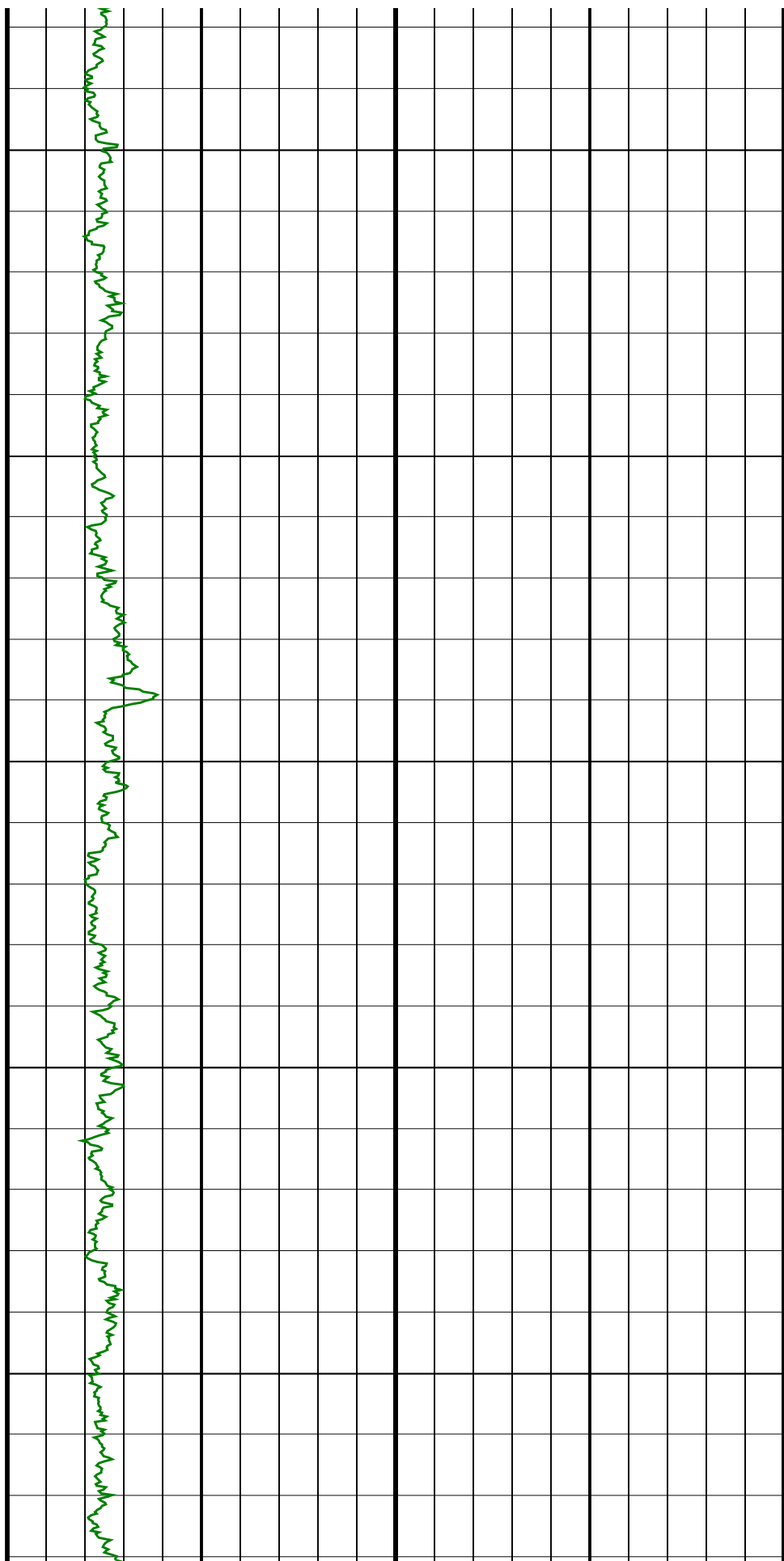
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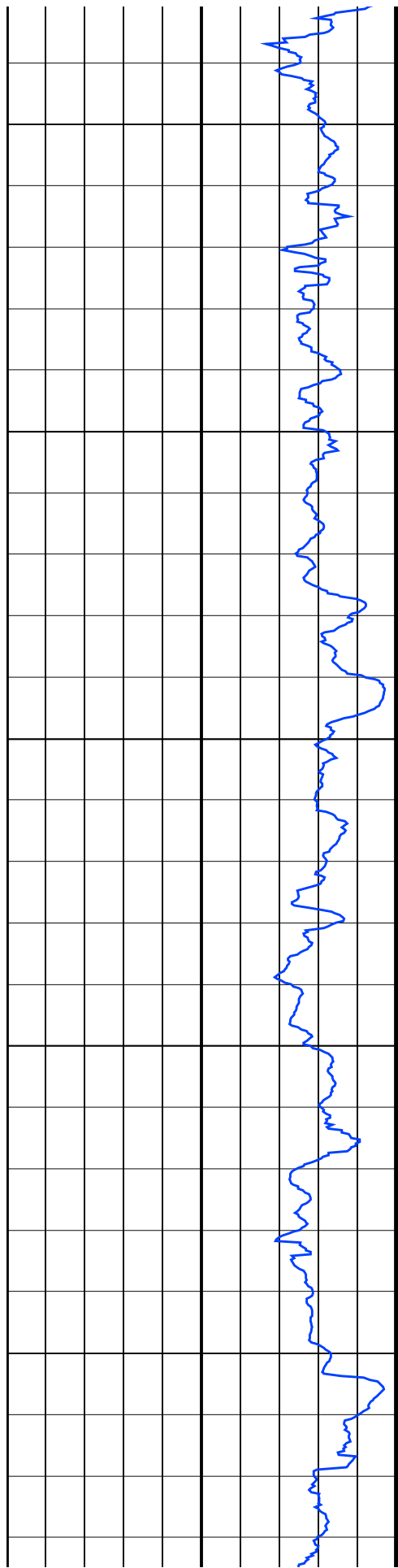




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TVD

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TVD

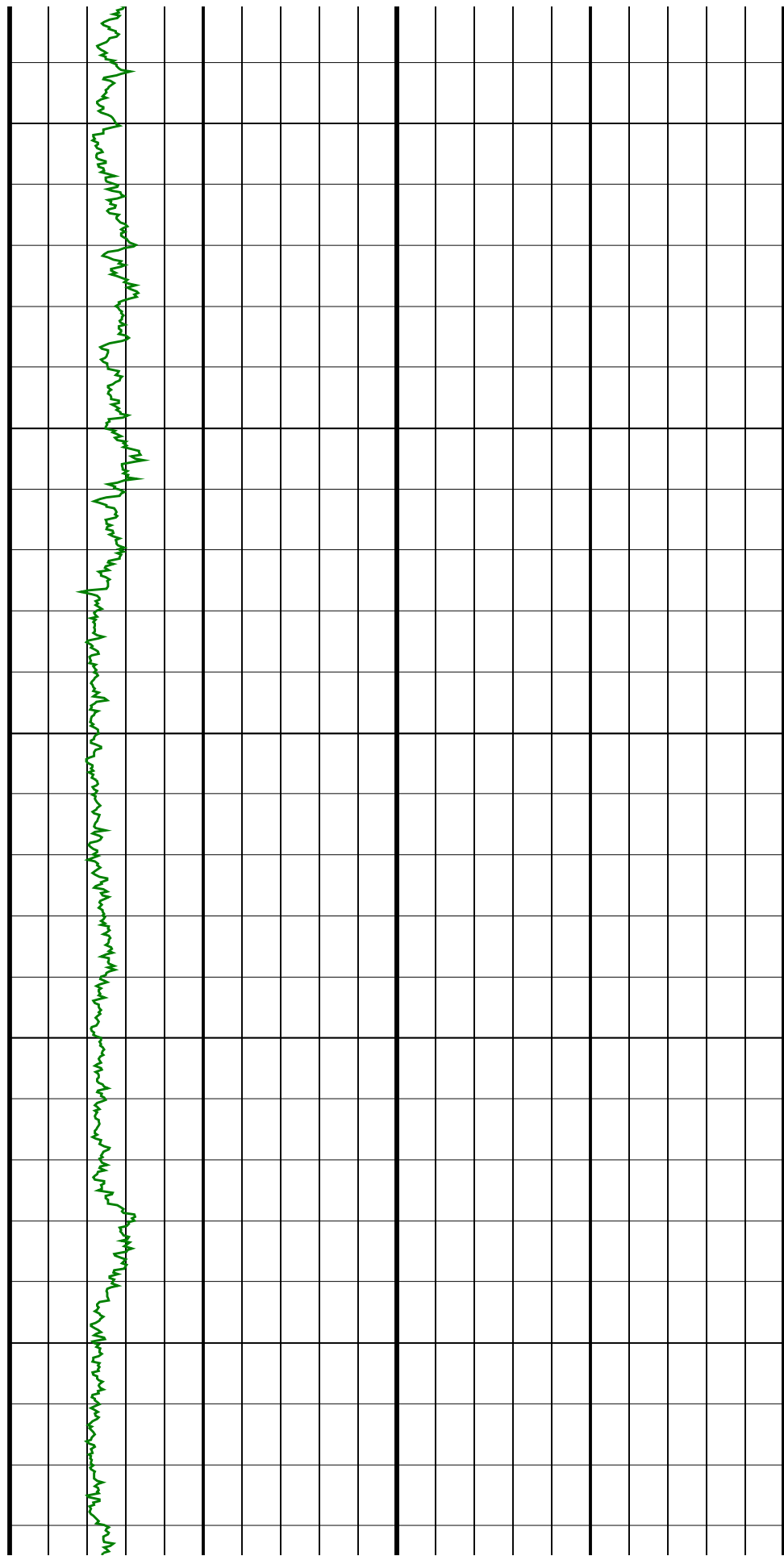


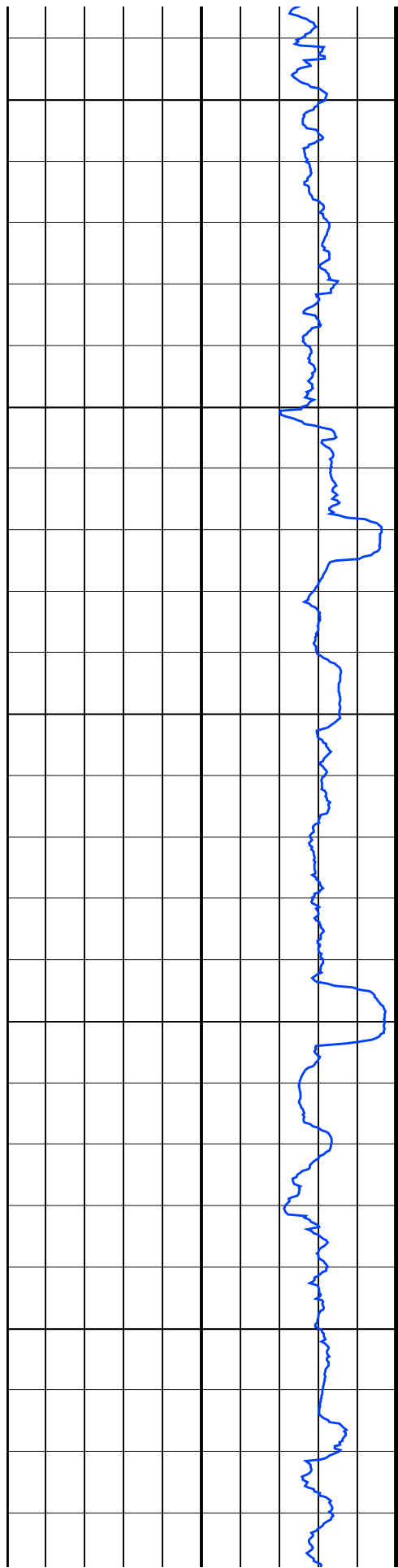


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TVD

1200
TVD

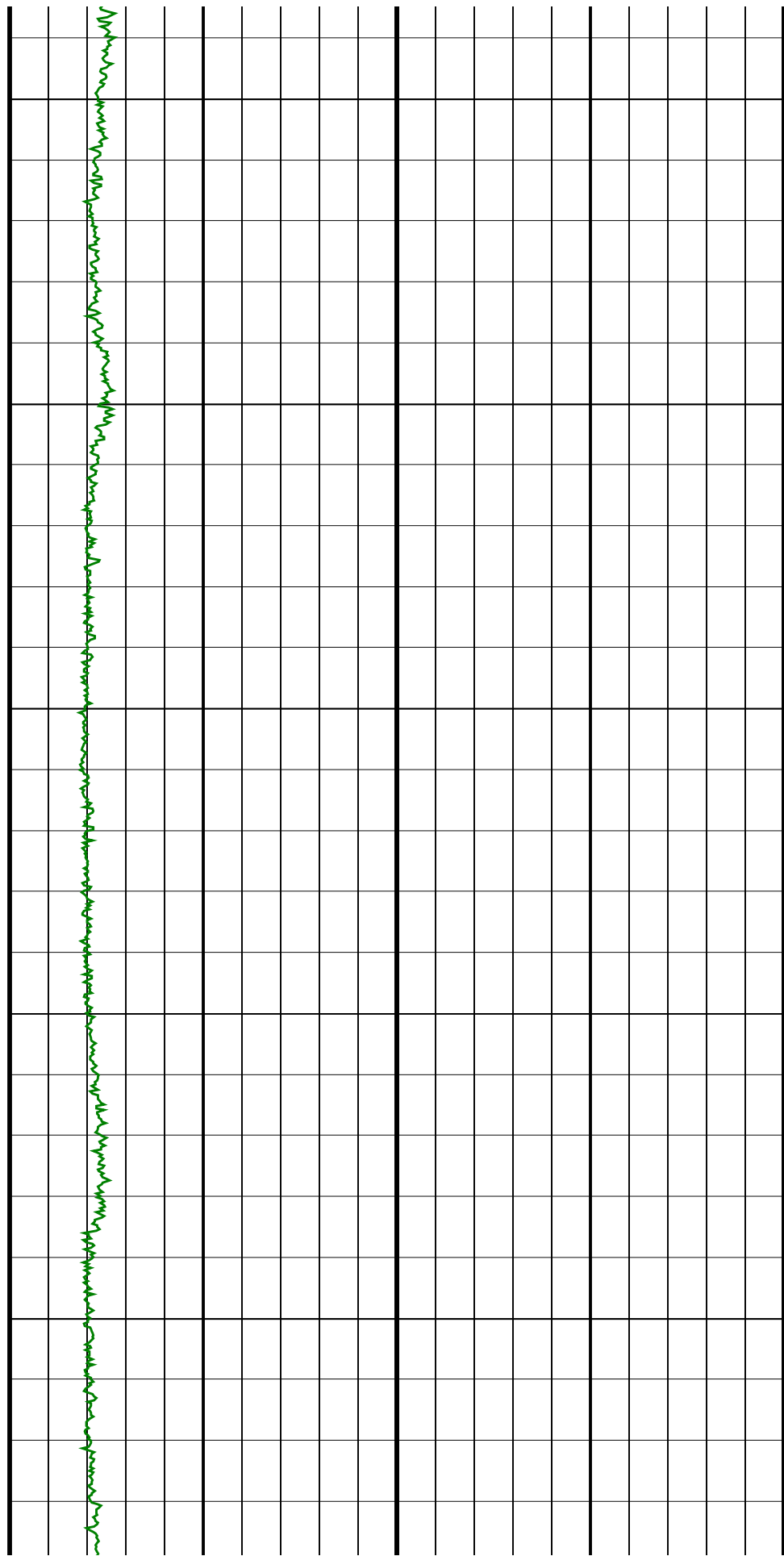
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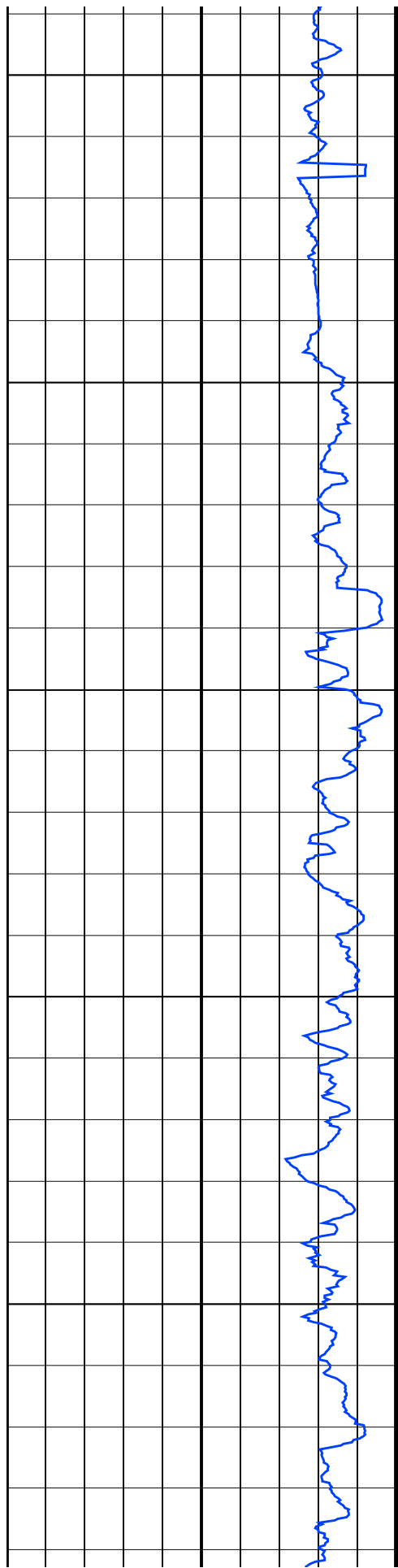




1300
TVD

1350
TVD

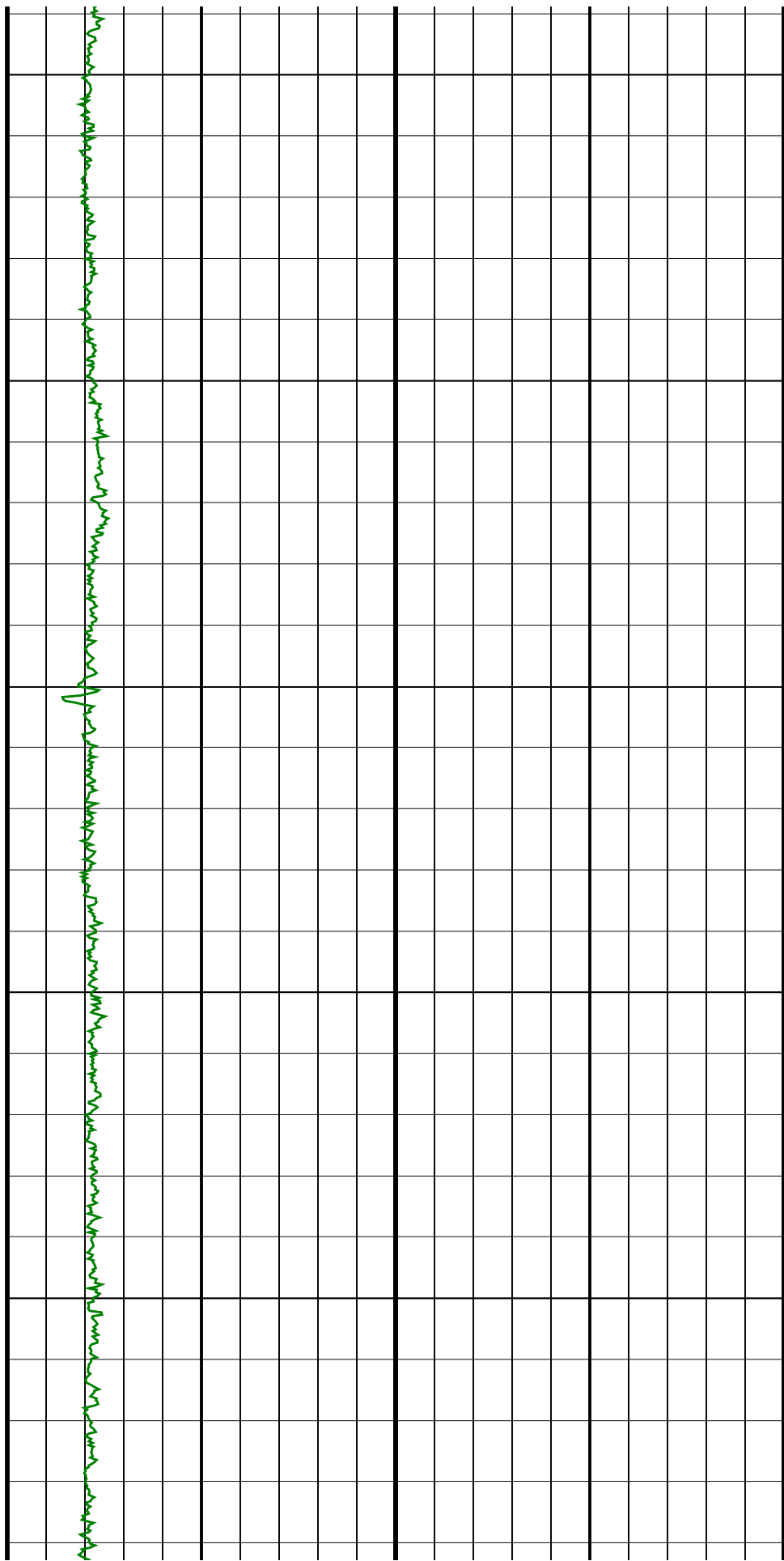


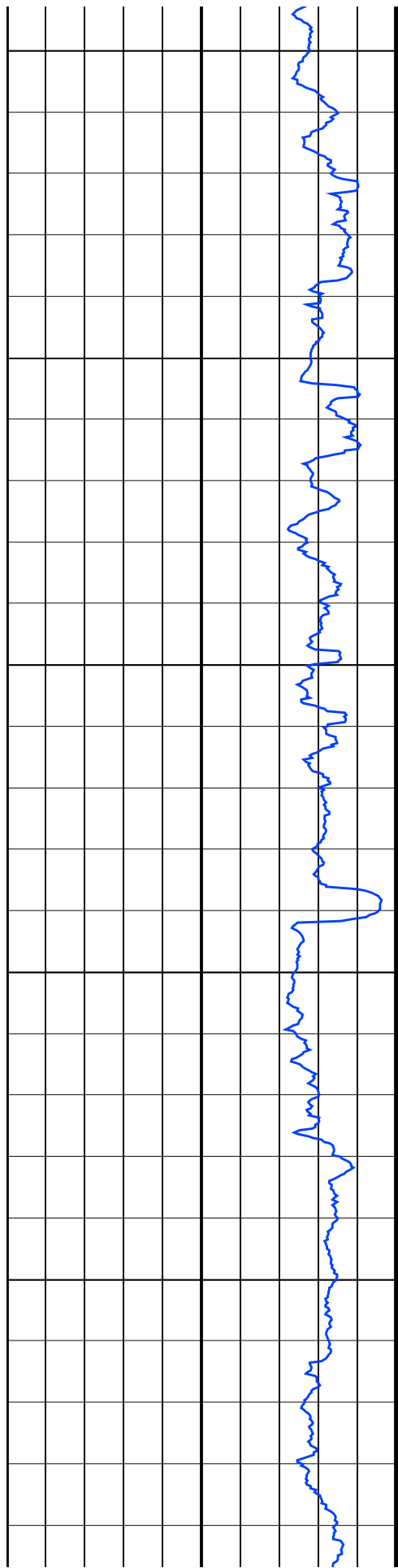


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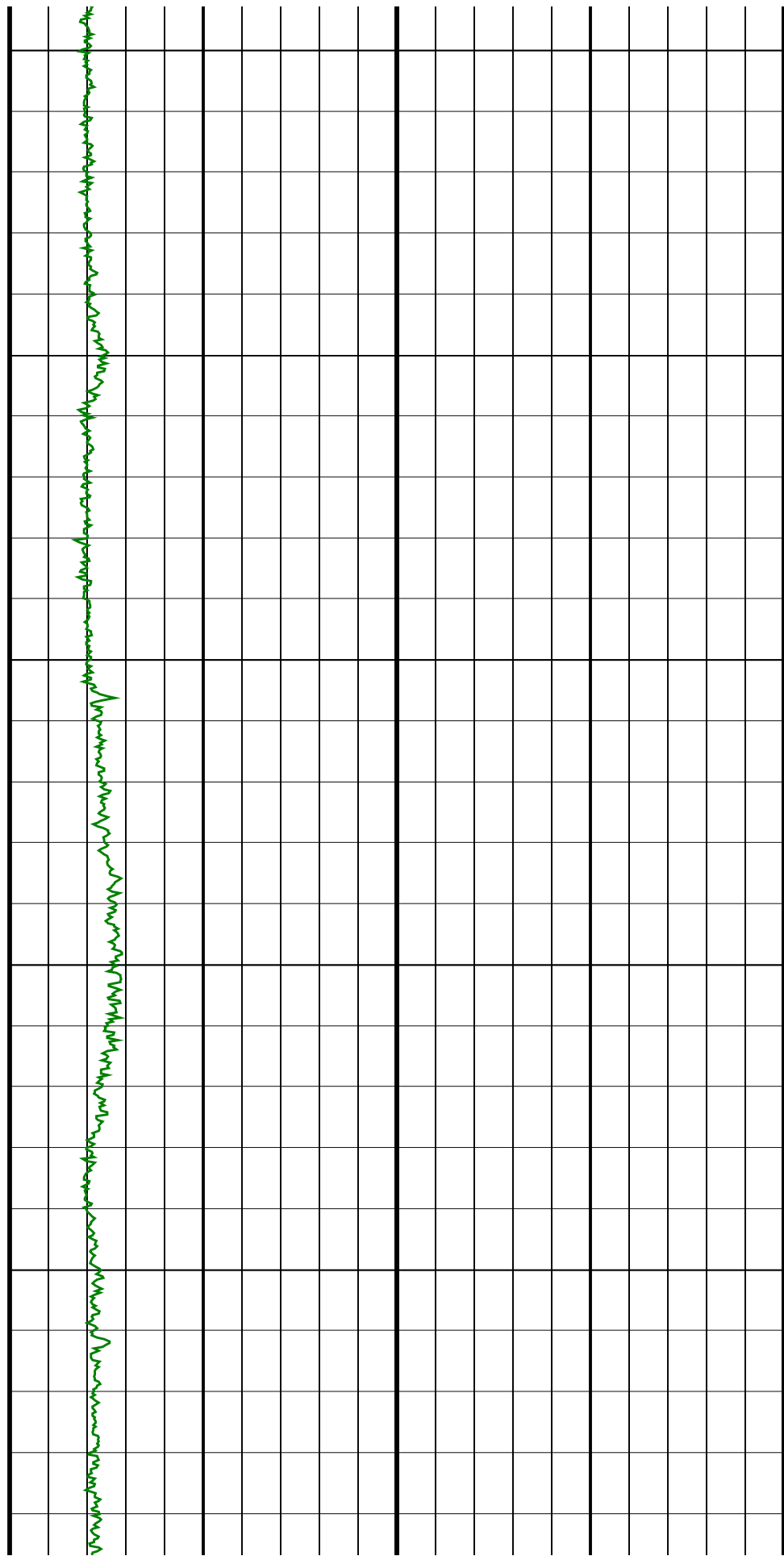
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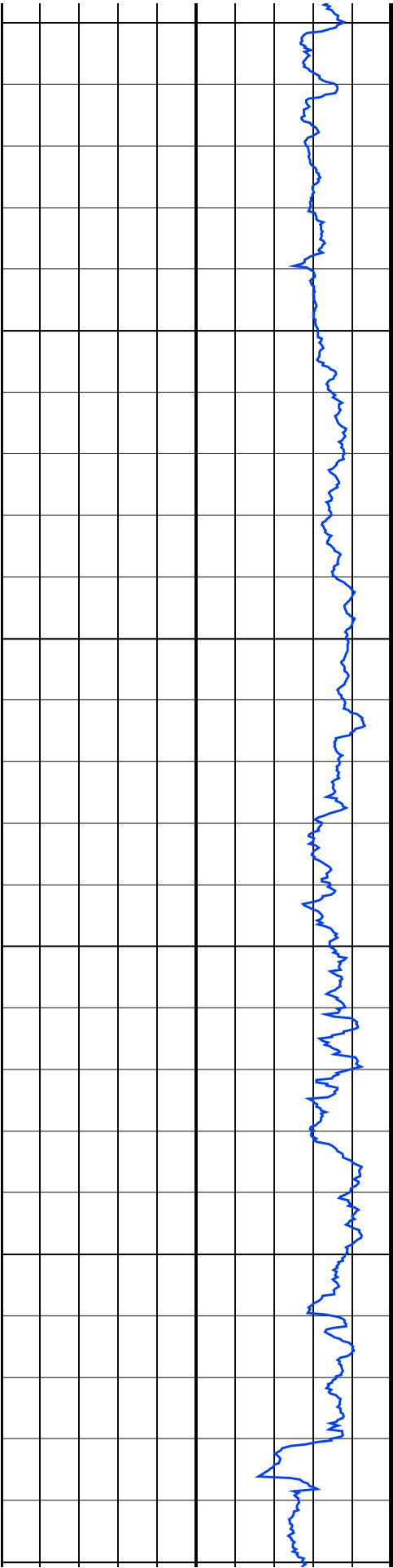




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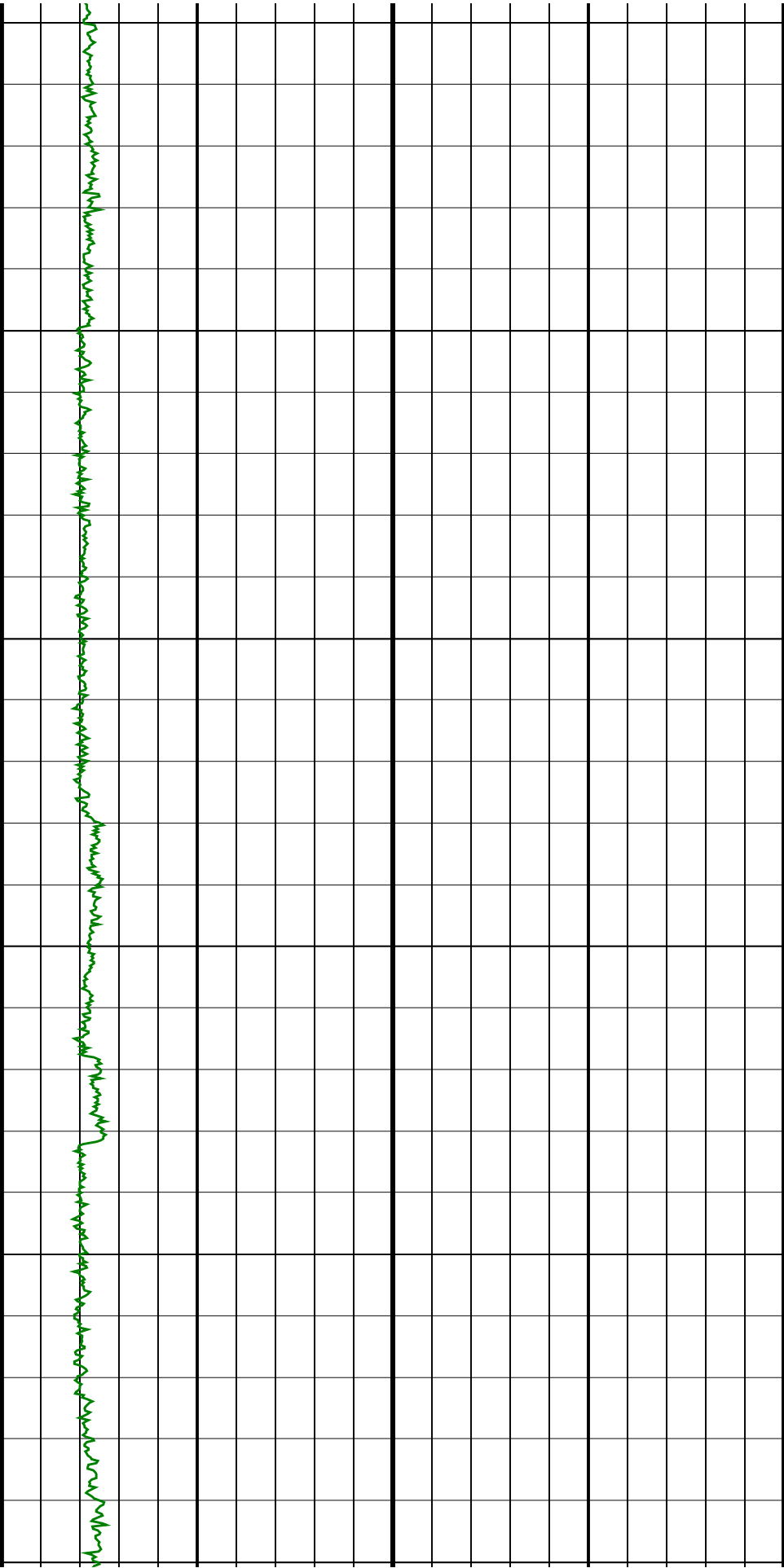


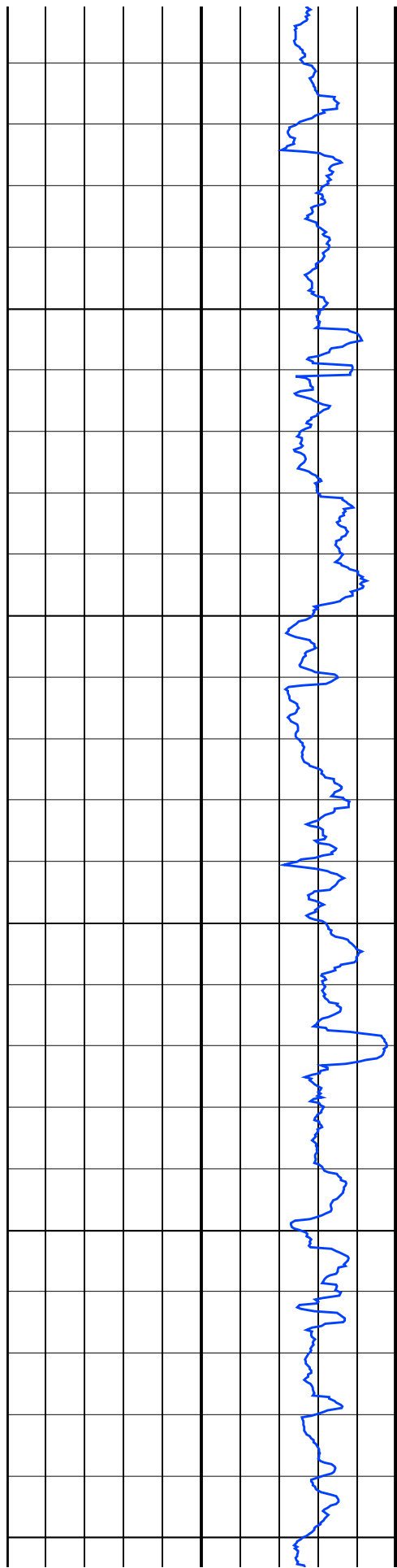


1650
TVD

1700
TVD

1750
TVD

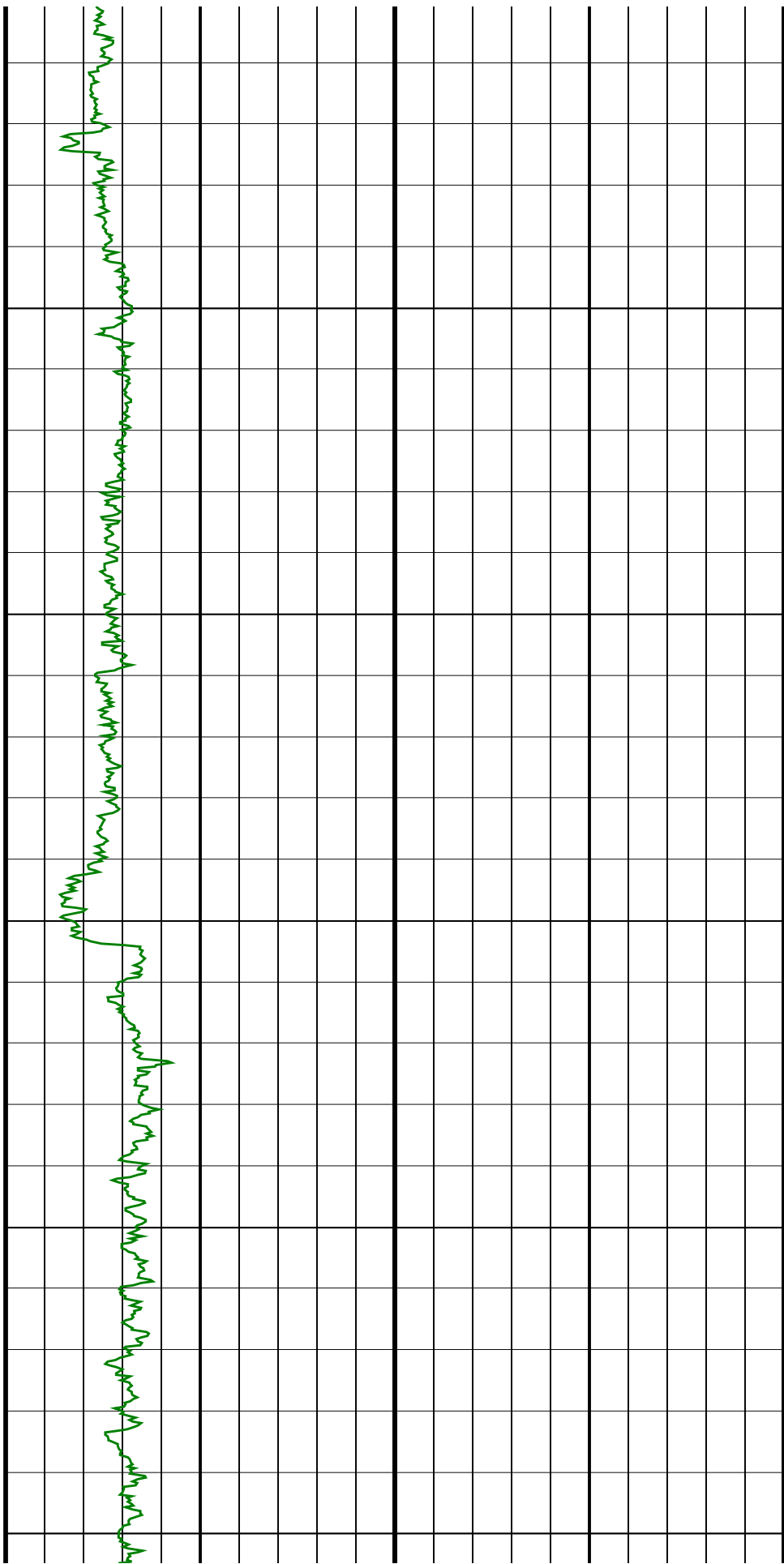


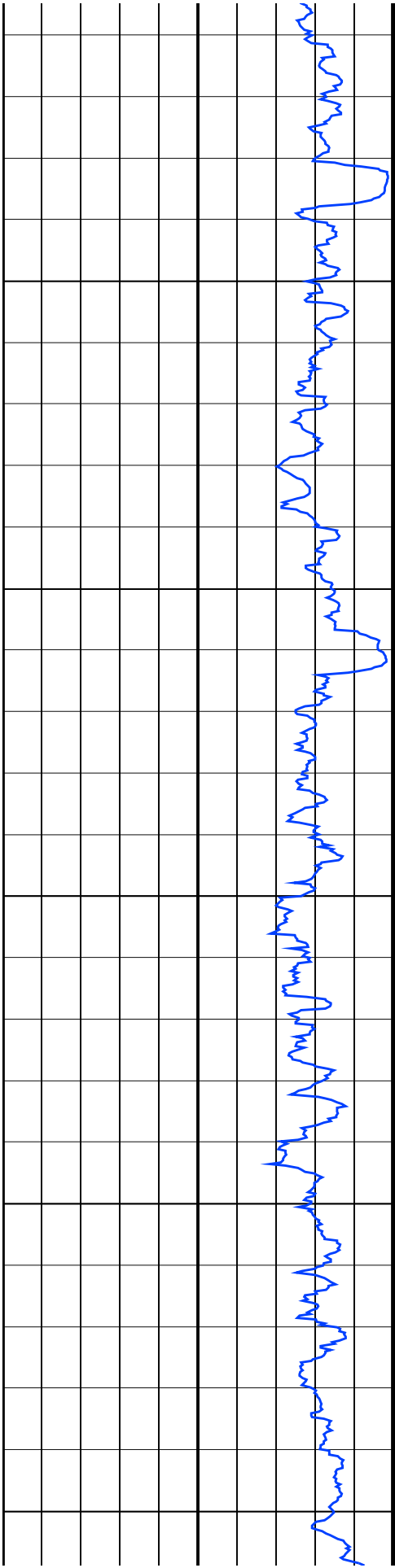


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TVD

1850
TVD

1900

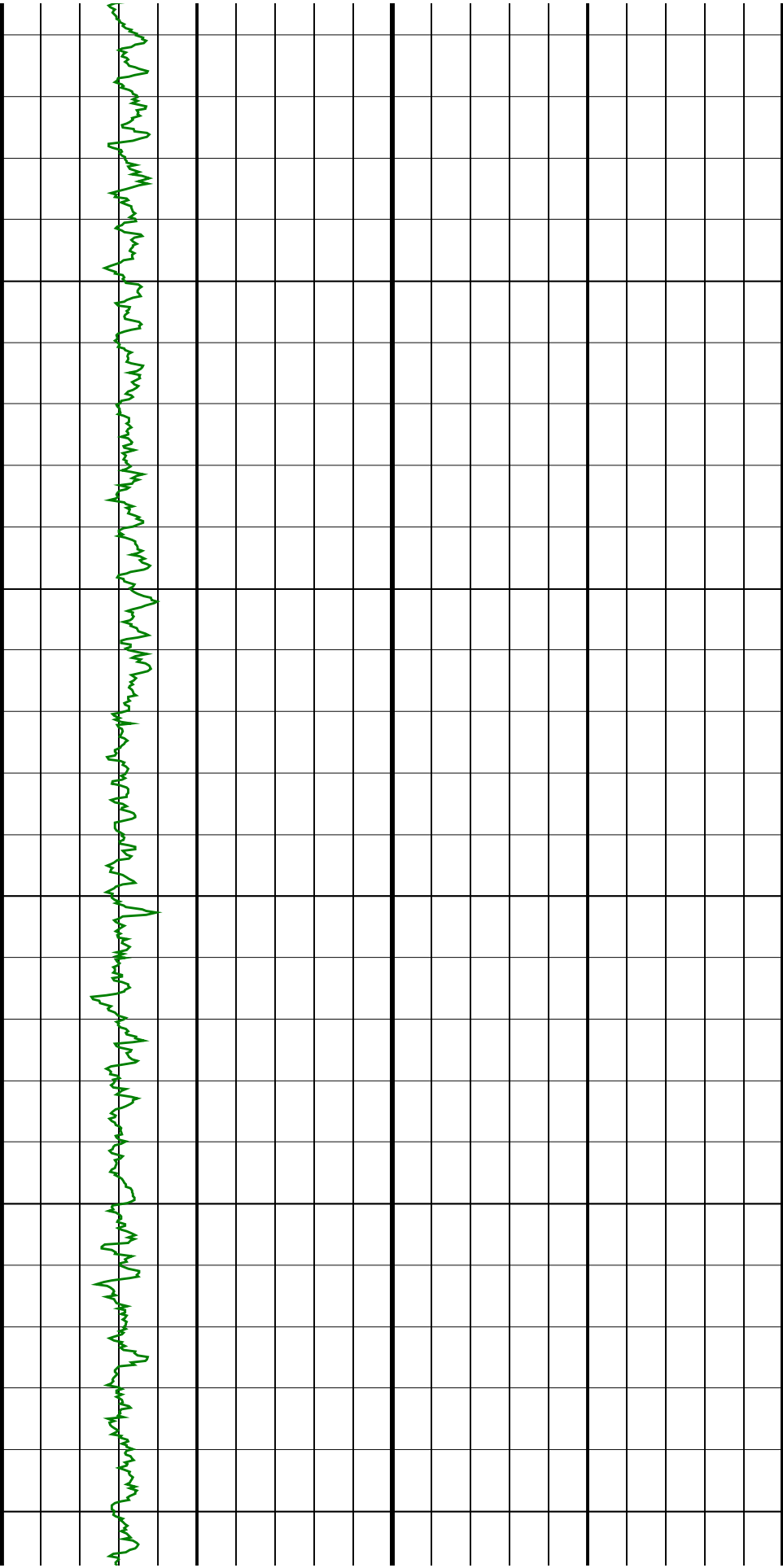


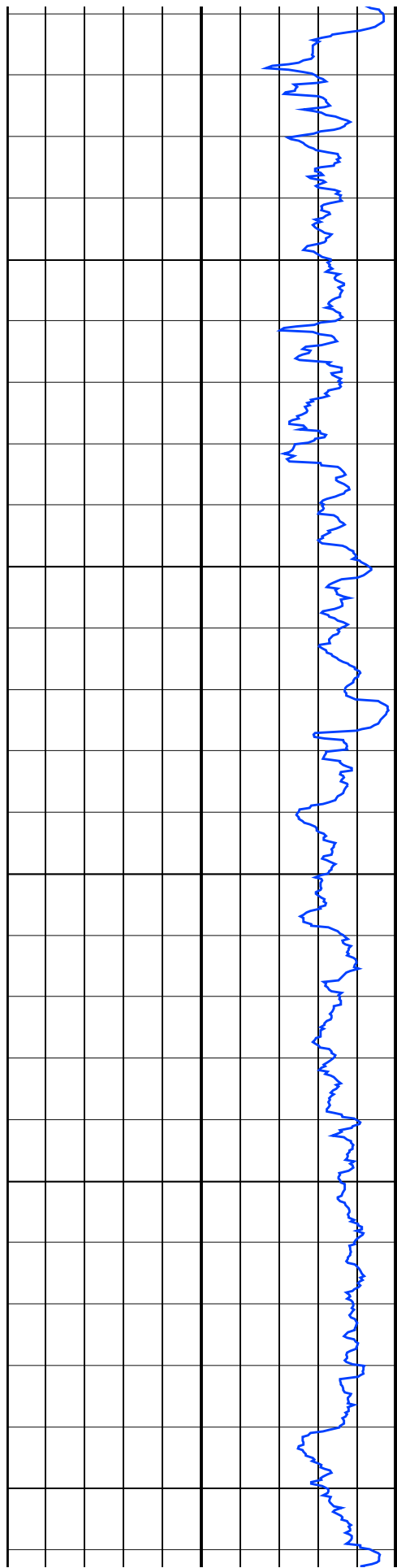


TVD

1950
TVD

2000
TVD

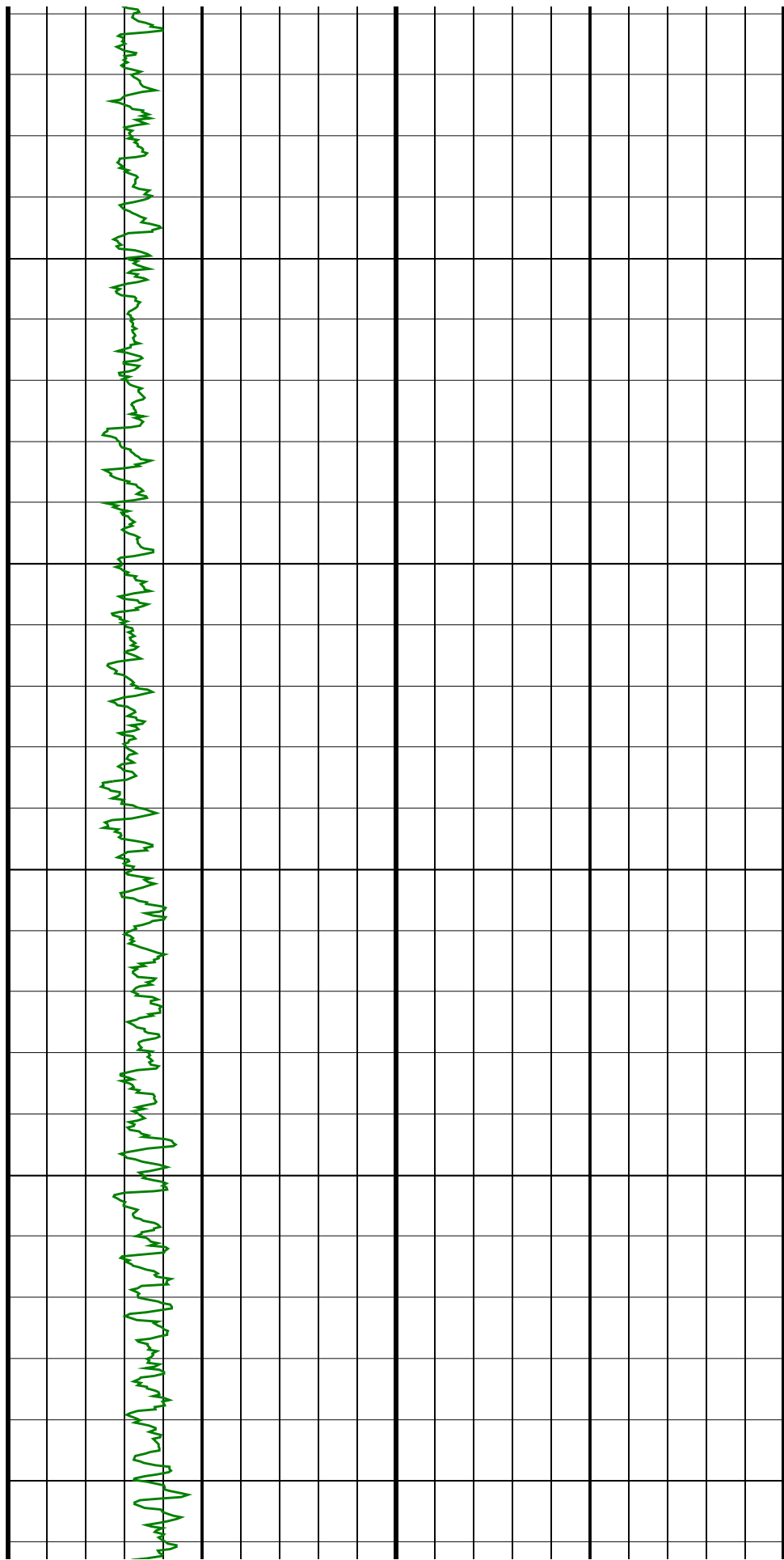


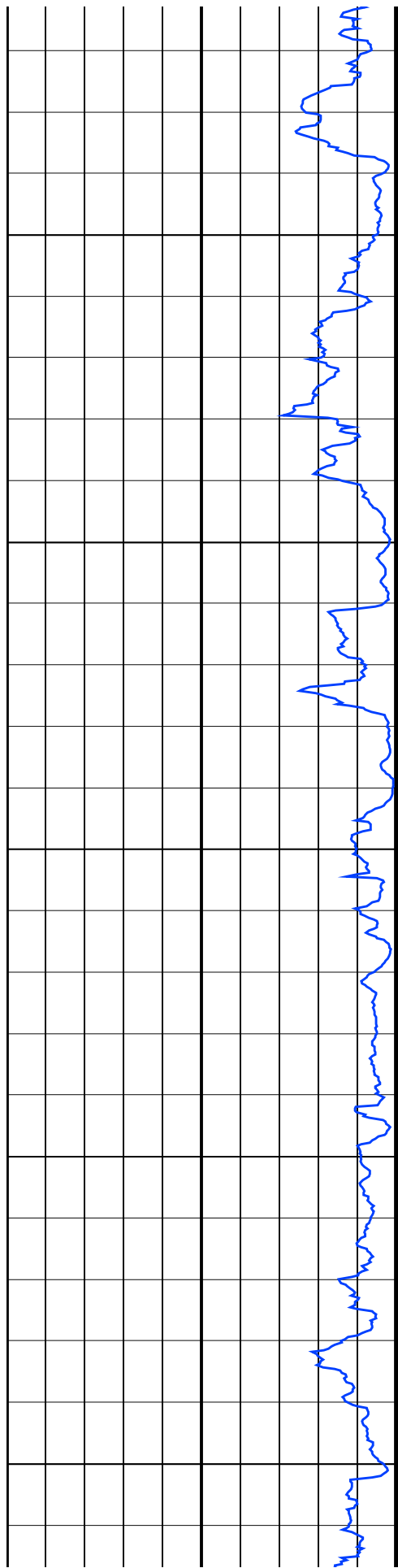


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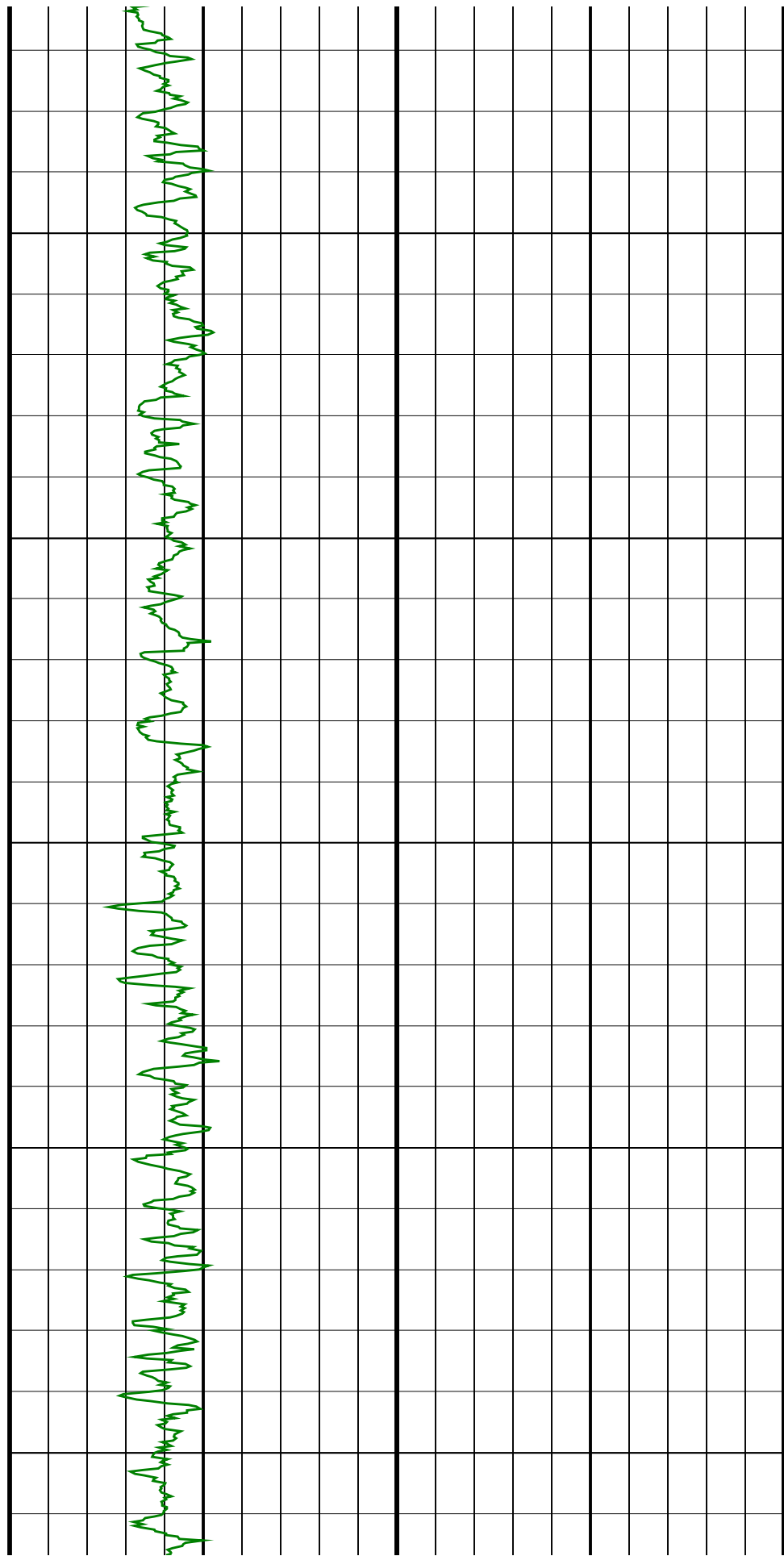
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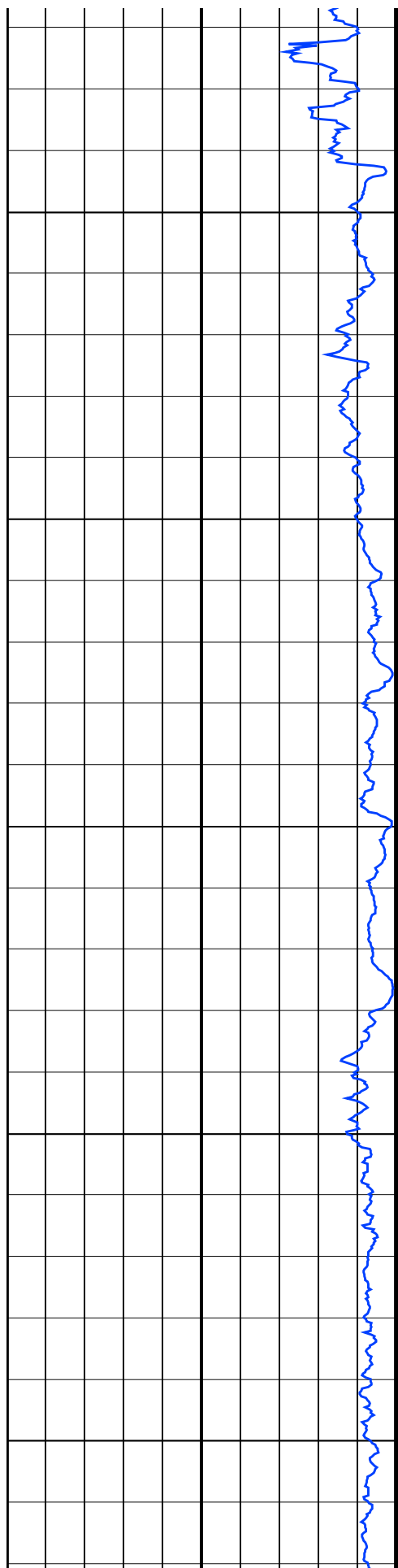




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2250
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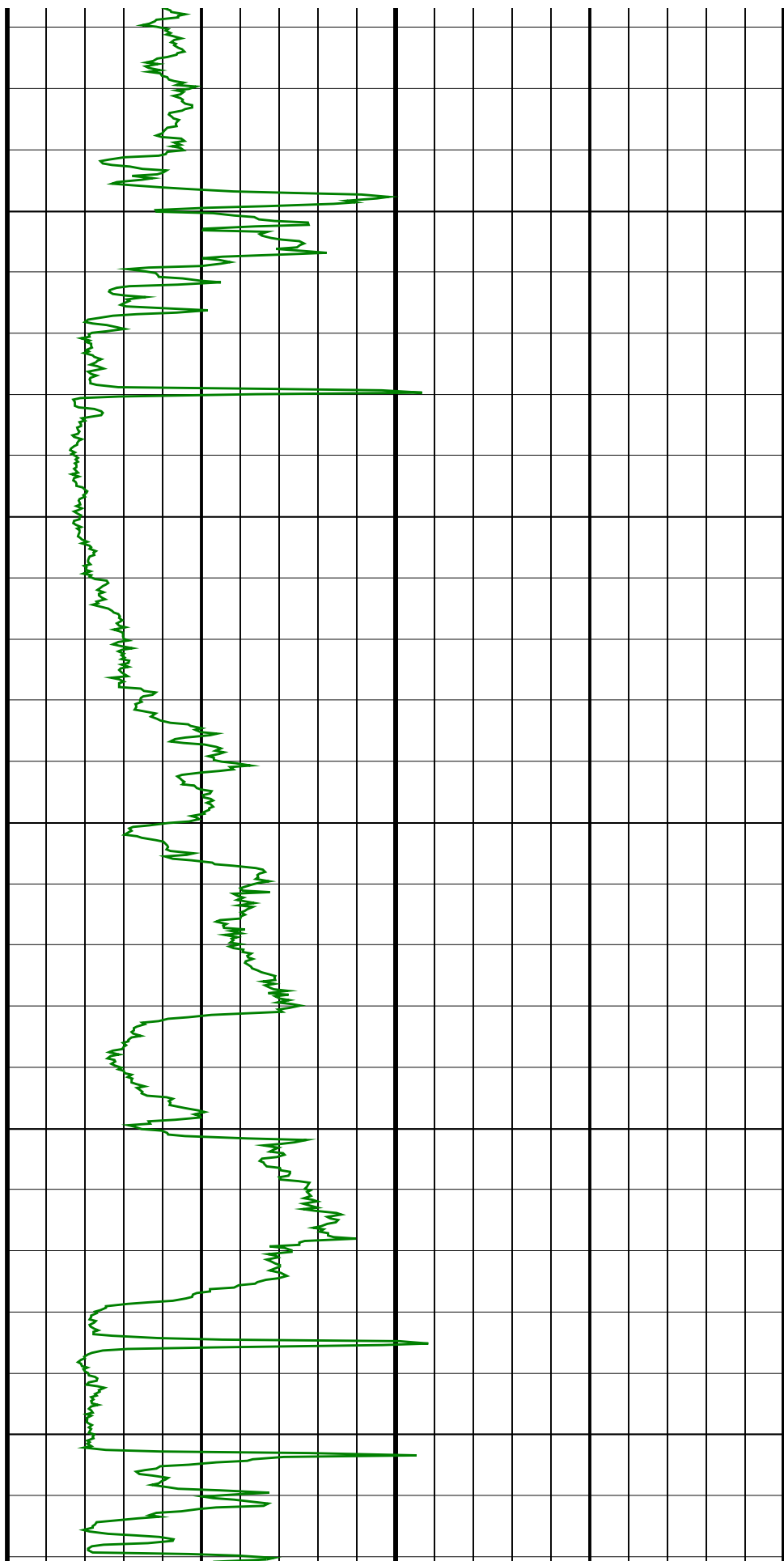


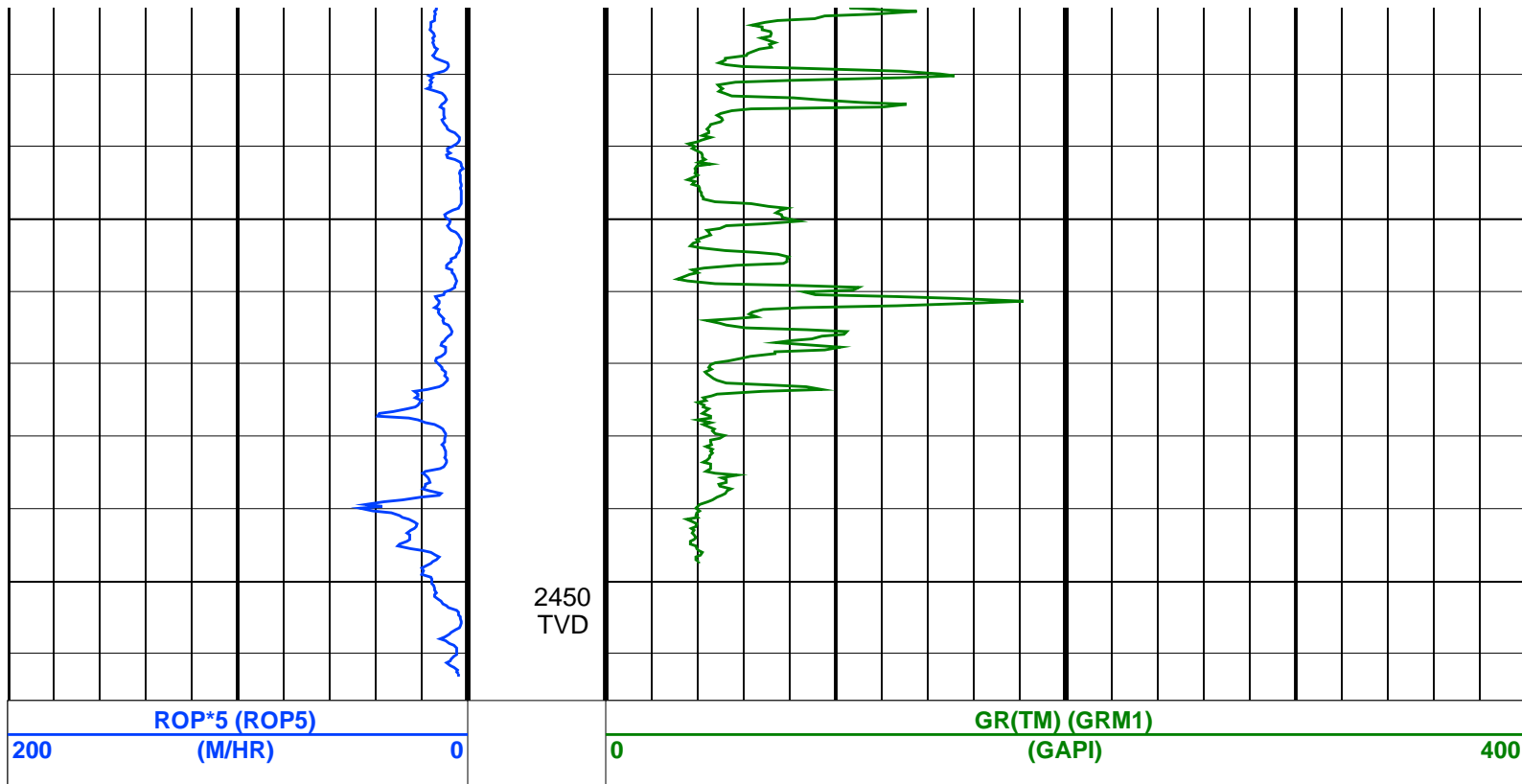


2300
TVD

2350
TVD

2400
TVD





SCHLUMBERGER

Survey report 24-Dec-2003 16:53:19 Page 1 of 5

Client.....: ESSO Australia Pty. Ltd.
Field.....: Halibut GDA 94

Well.....: HLA A6A Spud date.....: 14-Dec-2003
API number.....: Last survey date.....: 24-Dec-03
Engineer.....: Kym Nicholas Handley Total accepted surveys...: 102
MD of first survey.....: 576.00 m
RIG.....: ISDL 453 MD of last survey.....: 3473.50 m
STATE.....: Victoria

----- Survey calculation methods-----		----- Geomagnetic data -----	
Method for positions.....: Minimum curvature		Magnetic model.....: BGGM version 2003	
Method for DLS.....: Mason & Taylor		Magnetic date.....: 13-Dec-2003	
Magnetic field strength...: 1201.42 HCNT		Magnetic dec (+E/W-).....: 13.24 degrees	
----- Depth reference -----		Magnetic dip.....: -68.87 degrees	
Permanent datum.....: Mean Sea Level		----- MWD survey Reference Criteria -----	
Depth reference.....: Driller's Depth		Reference G.....: 1000.04 mGal	
GL above permanent.....: -73.00 m		Reference H.....: 1201.42 HCNT	
KB above permanent.....: Top Drive		Reference Dip.....: -68.87 degrees	
DF above permanent.....: 29.45 m		Tolerance of G.....: (+/-) 2.50 mGal	
----- Vertical section origin-----		Tolerance of H.....: (+/-) 6.00 HCNT	
Latitude (+N/S-).....: 0.00 m		Tolerance of Dip.....: (+/-) 0.45 degrees	
Departure (+E/W-).....: 0.00 m		----- Platform reference point-----	
Latitude (+N/S-).....: -1.34 m		Magnetic dec (+E/W-).....: 13.24 degrees	
Departure (+E/W-).....: 6.28 m		Grid convergence (+E/W-).....: -0.82 degrees	
Total az corr (+E/W-).....: 14.06 degrees		Total az corr (+E/W-).....: 14.06 degrees	
Azimuth from rotary table to target: 111.94 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			

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 (deg)	DLS (deg/10m)	Srvy Tool	Tool Corr
1	576.00	16.52	46.71	0.00	571.83	16.22	32.41	30.54	44.53	43.30	0.00	TIP	None
2	612.00	18.66	65.16	36.00	606.17	22.31	38.34	39.50	55.05	45.85	1.65	MWD	None
3	640.64	20.88	72.72	28.64	633.13	29.41	41.79	48.53	64.04	49.27	1.18	MWD	None
4	669.04	22.28	81.93	28.40	659.54	37.99	44.05	58.70	73.39	53.12	1.29	MWD	None
5	698.17	25.96	92.18	29.13	686.14	48.78	44.58	70.55	83.45	57.71	1.91	MWD	None
6	726.13	32.04	98.56	27.96	710.59	61.77	43.24	84.01	94.49	62.77	2.44	MWD	None
7	755.13	35.14	101.36	29.00	734.74	77.46	40.45	99.81	107.69	67.94	1.19	MWD	None
8	784.03	38.18	104.99	28.90	757.92	94.51	36.50	116.60	122.18	72.62	1.29	MWD	None
9	812.58	41.34	106.77	28.55	779.87	112.67	31.50	134.15	137.80	76.79	1.18	MWD	None
10	841.28	45.60	107.69	28.70	800.69	132.34	25.64	153.00	155.14	80.49	1.50	MWD	None
11	870.01	47.89	110.46	28.73	820.38	153.23	18.80	172.77	173.79	83.79	1.06	MWD	None
12	898.59	48.17	110.76	28.58	839.49	174.48	11.32	192.66	192.99	86.64	0.13	MWD	None
13	927.44	48.20	110.59	28.85	858.73	195.97	3.73	212.78	212.81	89.00	0.05	MWD	None
14	956.29	48.12	110.32	28.85	877.97	217.46	-3.78	232.92	232.95	90.93	0.08	MWD	None
15	984.33	47.86	109.89	28.04	896.74	238.28	-10.95	252.48	252.72	92.48	0.15	MWD	None
16	1013.35	49.13	110.76	29.02	915.97	260.01	-18.50	272.86	273.49	93.88	0.49	MWD	None
17	1042.37	49.10	110.29	29.02	934.97	281.94	-26.19	293.41	294.57	95.10	0.12	MWD	None
18	1070.95	48.92	112.60	28.58	953.71	303.51	-34.07	313.48	315.33	96.20	0.61	MWD	None
19	1099.50	48.56	112.85	28.55	972.54	324.97	-42.37	333.28	335.96	97.24	0.14	MWD	None
20	1128.34	48.23	113.56	28.84	991.69	346.53	-50.86	353.10	356.74	98.20	0.22	MWD	None
21	1156.89	48.10	112.23	28.55	1010.73	367.80	-59.14	372.69	377.36	99.02	0.35	MWD	None
22	1185.89	48.99	111.64	29.00	1029.93	389.53	-67.26	392.86	398.57	99.71	0.34	MWD	None
23	1214.43	48.87	111.26	28.54	1048.68	411.05	-75.12	412.88	419.66	100.31	0.11	MWD	None
24	1243.04	48.79	111.04	28.61	1067.52	432.58	-82.89	432.97	440.83	100.84	0.06	MWD	None
25	1271.74	48.42	110.86	28.70	1086.50	454.11	-90.59	453.07	462.04	101.31	0.14	MWD	None
26	1300.66	48.32	110.95	28.92	1105.71	475.72	-98.31	473.27	483.37	101.73	0.04	MWD	None
27	1329.70	47.97	110.81	29.04	1125.08	497.35	-106.02	493.48	504.74	102.12	0.13	MWD	None
28	1358.35	48.86	111.58	28.65	1144.10	518.77	-113.76	513.46	525.91	102.49	0.37	MWD	None
29	1387.00	48.51	111.89	28.65	1163.01	540.29	-121.73	533.44	547.16	102.85	0.15	MWD	None
30	1415.63	48.18	112.10	28.63	1182.04	561.68	-129.74	553.28	568.29	103.20	0.13	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 (deg)	At Azim (deg)	DLS (deg/10m)	Srvy Tool	Tool Corr
31	1444.08	49.07	111.63	28.45	1200.85	583.03	-137.69	573.09	589.40	103.51	0.34	MWD	None
32	1472.85	48.67	112.07	28.77	1219.77	604.70	-145.76	593.20	610.85	103.80	0.18	MWD	None
33	1501.71	48.05	112.19	28.86	1238.95	626.27	-153.88	613.18	632.20	104.09	0.22	MWD	None
34	1530.31	48.89	111.35	28.60	1257.91	647.68	-161.82	633.07	653.42	104.34	0.37	MWD	None
35	1558.89	48.43	111.36	28.58	1276.79	669.14	-169.64	653.05	674.72	104.56	0.16	MWD	None
36	1588.10	47.93	111.41	29.21	1296.27	690.90	-177.57	673.32	696.34	104.77	0.17	MWD	None
37	1616.44	48.58	110.75	28.34	1315.13	712.05	-185.18	693.05	717.36	104.96	0.29	MWD	None
38	1645.10	48.22	111.23	28.66	1334.16	733.48	-192.86	713.06	738.68	105.13	0.18	MWD	None
39	1673.88	49.06	110.84	28.78	1353.18	755.07	-200.61	733.22	760.17	105.30	0.31	MWD	None
40	1702.50	48.76	110.86	28.62	1371.99	776.64	-208.29	753.38	781.64	105.45	0.10	MWD	None
41	1731.12	48.75	110.52	28.62	1390.86	798.15	-215.89	773.51	803.07	105.59	0.09	MWD	None
42	1759.78	48.56	110.62	28.66	1409.79	819.66	-223.45	793.66	824.51	105.72	0.07	MWD	None
43	1788.84	48.08	110.63	29.06	1429.12	841.36	-231.09	813.97	846.14	105.85	0.17	MWD	None
44	1817.48	49.33	110.10	28.64	1448.02	862.87	-238.58	834.14	867.59	105.96	0.46	MWD	None
45	1846.27	49.78	111.08	28.79	1466.69	884.78	-246.29	854.65	889.43	106.08	0.30	MWD	None
46	1874.92	49.45	111.02	28.65	1485.26	906.60	-254.12	875.02	911.17	106.19	0.12	MWD	None
47	1903.44	48.97	111.33	28.52	1503.89	928.19	-261.92	895.15	932.69	106.31	0.19	MWD	None
48	1932.33	48.63	110.95	28.89	1522.92	949.92	-269.76	915.43	954.35	106.42	0.15	MWD	None
49	1960.97	48.35	111.14	28.64	1541.90	971.37	-277.47	935.44	975.73	106.52	0.11	MWD	None
50	1989.74	48.15	111.13	28.77	1561.05	992.83	-285.20	955.46	997.12	106.62	0.07	MWD	None
51	2018.21	47.97	111.14	28.47	1580.08	1014.00	-292.84	975.22	1018.23	106.71	0.06	MWD	None
52	2046.82	48.84	110.96	28.61	1599.08	1035.40	-300.53	995.18	1039.57	106.80	0.31	MWD	None
53	2075.47	48.65	110.96	28.65	1617.97	1056.93	-308.23	1015.30	1061.05	106.89	0.07	MWD	None
54	2104.37	48.62	110.76	28.91	1637.07	1078.62	-315.96	1035.57	1082.70	106.97	0.05	MWD	None
55	2133.05	48.53	111.16	28.67	1656.04	1100.12	-323.65	1055.65	1104.15	107.04	0.11	MWD	None
56	2161.84	48.42	111.22	28.79	1675.13	1121.67	-331.44	1075.74	1125.65	107.12	0.04	MWD	None
57	2190.77	48.51	110.92	28.93	1694.31	1143.32	-339.22	1095.95	1147.25	107.20	0.08	MWD	None
58	2219.42	48.65	111.34	28.65	1713.27	1164.81	-346.97	1115.99	1168.68	107.27	0.12	MWD	None

59	2248.08	48.65	111.32	28.66	1732.20	1186.32	-354.79	1136.03	1190.15	107.34	0.01	MWD	None
60	2276.88	48.60	111.35	28.80	1751.24	1207.93	-362.66	1156.16	1211.71	107.42	0.02	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 (deg)	At Azim (deg)	DLS (deg)	Srvy tool	Tool Corr
61	2305.36	48.50	112.00	28.48	1770.09	1229.28	-370.54	1176.00	1232.99	107.49	0.17	MWD	None
62	2333.97	48.59	111.93	28.61	1789.03	1250.72	-378.56	1195.89	1254.37	107.57	0.04	MWD	None
63	2362.73	48.60	112.07	28.76	1808.05	1272.29	-386.64	1215.89	1275.88	107.64	0.04	MWD	None
64	2391.41	48.56	112.26	28.68	1827.03	1293.80	-394.75	1235.80	1297.32	107.72	0.05	MWD	None
65	2420.17	48.74	112.04	28.76	1846.03	1315.39	-402.89	1255.80	1318.85	107.79	0.08	MWD	None
66	2449.02	49.09	111.59	28.85	1864.99	1337.13	-410.97	1275.99	1340.54	107.85	0.17	MWD	None
67	2477.63	48.94	111.71	28.61	1883.75	1358.73	-418.94	1296.06	1362.09	107.91	0.06	MWD	None
68	2506.27	48.84	111.88	28.64	1902.58	1380.31	-426.95	1316.10	1383.62	107.97	0.06	MWD	None
69	2534.69	48.56	109.99	28.42	1921.34	1401.65	-434.58	1336.04	1404.94	108.02	0.51	MWD	None
70	2563.89	48.23	109.68	29.20	1940.73	1423.47	-441.99	1356.58	1426.76	108.05	0.14	MWD	None
71	2593.57	48.80	109.94	29.68	1960.39	1445.69	-449.53	1377.50	1448.99	108.07	0.20	MWD	None
72	2622.11	48.83	109.90	28.54	1979.18	1467.16	-456.85	1397.69	1470.46	108.10	0.01	MWD	None
73	2650.57	48.86	109.36	28.46	1997.91	1488.57	-464.04	1417.87	1491.88	108.12	0.14	MWD	None
74	2679.12	49.16	109.87	28.55	2016.64	1510.10	-471.28	1438.17	1513.42	108.14	0.17	MWD	None
75	2707.57	49.02	111.04	28.45	2035.27	1531.59	-478.79	1458.32	1534.90	108.18	0.31	MWD	None
76	2736.05	49.24	110.79	28.48	2053.90	1553.12	-486.48	1478.43	1556.42	108.21	0.10	MWD	None
77	2764.71	49.29	110.56	28.66	2072.61	1574.84	-494.15	1498.75	1578.11	108.25	0.06	MWD	None
78	2793.33	48.69	111.41	28.62	2091.39	1596.43	-501.88	1518.92	1599.68	108.28	0.31	MWD	None
79	2822.37	48.64	111.72	29.04	2110.57	1618.23	-509.90	1539.19	1621.45	108.33	0.08	MWD	None
80	2851.25	48.78	111.82	28.88	2129.62	1639.93	-517.94	1559.35	1643.11	108.37	0.06	MWD	None
81	2879.67	49.04	111.47	28.42	2148.30	1661.35	-525.84	1579.26	1664.50	108.42	0.13	MWD	None
82	2908.98	49.87	112.33	29.31	2167.36	1683.62	-534.15	1599.92	1686.73	108.46	0.36	MWD	None
83	2937.78	52.62	114.88	28.80	2185.38	1706.07	-543.15	1620.49	1709.09	108.53	1.18	MWD	None
84	2966.32	54.26	117.59	28.54	2202.39	1728.92	-553.29	1641.05	1731.81	108.63	0.95	MWD	None
85	2994.76	56.58	121.21	28.44	2218.53	1752.13	-564.79	1661.43	1754.81	108.77	1.33	MWD	None
86	3023.19	57.87	123.67	28.43	2233.92	1775.63	-577.61	1681.60	1778.04	108.96	0.86	MWD	None
87	3052.15	58.67	125.33	28.96	2249.15	1799.67	-591.56	1701.90	1801.78	109.17	0.56	MWD	None
88	3080.94	59.13	125.92	28.79	2264.02	1823.62	-605.92	1721.94	1825.44	109.39	0.24	MWD	None
89	3102.26	58.69	126.09	21.32	2275.03	1841.33	-616.66	1736.71	1842.94	109.55	0.22	MWD	None
90	3138.06	58.73	126.19	35.80	2293.63	1870.99	-634.70	1761.41	1872.28	109.82	0.03	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 (deg)	At Azim (deg)	DLS (deg)	Srvy tool	Tool Corr
91	3166.82	59.02	126.17	28.76	2308.49	1894.85	-649.23	1781.29	1895.91	110.03	0.10	MWD	None
92	3195.54	59.35	125.74	28.72	2323.21	1918.79	-663.72	1801.25	1919.64	110.23	0.17	MWD	None
93	3224.40	60.26	125.81	28.86	2337.72	1943.01	-678.30	1821.49	1943.69	110.42	0.32	MWD	None
94	3253.25	60.64	126.22	28.85	2351.95	1967.35	-693.05	1841.79	1967.87	110.62	0.18	MWD	None
95	3282.28	60.02	125.92	29.03	2366.32	1991.81	-707.91	1862.18	1992.20	110.81	0.23	MWD	None
96	3310.72	60.30	126.07	28.44	2380.47	2015.74	-722.40	1882.14	2016.01	111.00	0.11	MWD	None
97	3339.55	61.10	126.45	28.83	2394.58	2040.10	-737.27	1902.41	2040.28	111.18	0.30	MWD	None
98	3368.25	61.58	126.37	28.70	2408.34	2064.49	-752.22	1922.68	2064.59	111.37	0.17	MWD	None
99	3396.83	62.34	126.22	28.58	2421.78	2088.92	-767.15	1943.01	2088.97	111.55	0.27	MWD	None
100	3425.41	62.72	126.76	28.58	2434.96	2113.47	-782.23	1963.40	2113.48	111.72	0.21	MWD	None
101	3450.21	63.19	126.50	24.80	2446.24	2134.83	-795.41	1981.12	2134.84	111.88	0.21	MWD	None
102	3473.50	63.60	126.50	23.29	2456.67	2154.99	-807.80	1997.86	2154.99	112.02	0.18	Projection to TD	

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Well: HLA A6A
Field: Halibut GDA 94
Rig: ISDL 453
State: Victoria

Gamma Ray Service
1:500 True Vertical Depth
Real Time Log