Schlumberger

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

Well: **BMA A6A**
Field: **Bream A**
Rig: **ISDL 453** State: **Victoria**

Rig: ISDL 453
Field: Bream A
Location: Bass Strait
Well: BMA A6A
Company: ESSO Australia Pty. Ltd.

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

Location

Total depth:	3256.0 m
Spud date:	1 February 2006
Runs:	1 To 1

Elevation

K.B.	Top Drive
G.L.	−59.4 m
D.F.	32.82 m

Permanent datum: Mean Sea Level Elev.: 0 m
Log measured from: Drill Floor 32.82 m above Perm. datum
Depth reference: Driller's Depth

Service Order no.		Longitude	Latitude
06ASQ0001	Y = 5738461.49 m X = 567347.12 m	E147° 46' 20.421"	S38° 29' 58.784"

Depth logged: 851.0 m To 3256.0 m
Date logged: 1−Feb−06 To 12−Feb−06
Mag decl: 13.068 deg.
Mag dip: −69.035 deg.
Other services: Directional Drilling, D&I

Bore hole record

Hole size	from	to
8−1/2 in.	851.0 m	3256.0 m

Casing record

Size	Density	from	to
10−3/4 in.	40.5 lbm/m	11.9 m	851.0 m

Mud record

Type	from	to
KCl/PHPA/Glycol	851.0 m	3256.0 m

Borehole deviation record

Min	Max	from	to
18.78 deg	65.48 deg.	851.0 m	1500.0 m
63.94 deg	68.20 deg.	1500.0 m	2500.0 m
64.04 deg	67.23 deg.	2500.0 m	3256.0 m

Surface equipment

Unit	OLU−FB−924
Depth system	DES−CA−ASQ04−01

Software record

IDEAL Wis	ID11_0C_01
SPM	HSPM11_0C_01
LWD	N/A
MWD	V8.0B96

Bit Run Summary

Run number		1
Bit size	in.	8.5
Bit start depth	m	851.0
Bit end depth	m	3256.0
Top interval logged	m	851.0
Bottom interval logged	m	3239.4
Begin log: time		05:00
Begin log: date		02−Feb−06
End log: time		09:41
End log: date		12−Feb−06
Mud data		
Depth	m	3256.0
Type		KCl/PHPA/Gly.
Mud weight	ppg	10.05
Solids	%	8.0
Chlorides	mg/l	47,500
Rm		N/A
Rmf		N/A
Rmc		N/A

Potassium	%	8.6									
Environmental data											
GR											
Mud weight	ppg	10.05									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size		N/A									
Mud weight		N/A									
Temperature		N/A									
Mud salinity		N/A									
Formation salinity		N/A									
Recording rate 1	SEC	3.83									
Recording rate 2	SEC	N/A									
Filtering GR		3 pt.									
Filtering density		N/A									
Filtering Neutron		N/A									
Company representative		G. Campbell	B. Davis	T. Bassett	B. Steel						
Schlumberger D&M Personnel		L. Johnston	B. Pattarakorn	C. Soper	L. Muskett	C. Skiba					

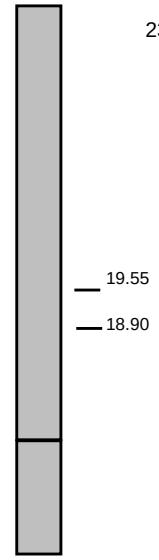
OTHER SERVICES FOR RUN1	OTHER SERVICES FOR RUN	OTHER SERVICES FOR RUN
Directional Drilling Directional Surveys D&I		

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER	REMARKS: RUN NUMBER
Depth is referenced to driller's depth Gamma Ray corrected for Tool Size, Bit Size and Mud weight Gamma Ray not corrected for Potassium Mud type is KCl/PHPA/Glycol. 8−1/2 in. hole was drilled from 851.0m to 3256.0 m POOH due to TD of BMA A6A		

EQUIPMENT DESCRIPTION

RUN1	RUN	RUN

DOWNHOLE EQUIPMENT



6−3/4 in. PowerPulse 23.85
MDC: Z408
MEC: 64
MDI: 738
MGR: 503
DHS: V8.0B96

6−5/8 in. NM Pony w/Float 15.46
S/N: ANA98−007

6−5/8 in. NM Roller Reamer 12.84
S/N: GU2298

6−3/4 in. NM Pony 10.76
S/N: ASS15700

7 in. PowerPak* Motor 9.20
A700GT 7:8
S/N: N7311
1.5 deg. Bent Housing
8−3/8 in. Motor Sleeve

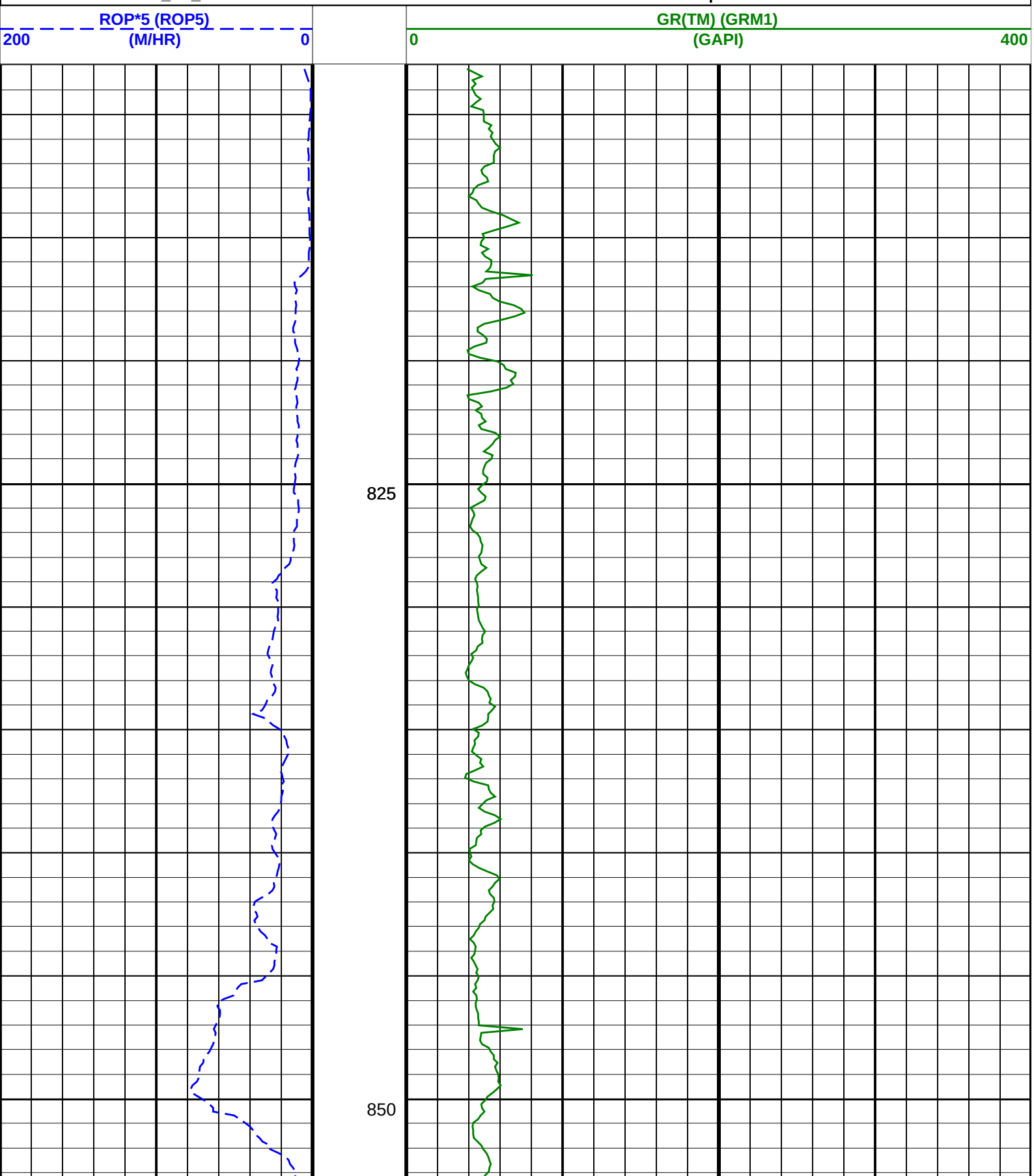
Smith PDC Bit 0.23
OD: 8−1/2 in.
S73PX S/N: JT0016R1

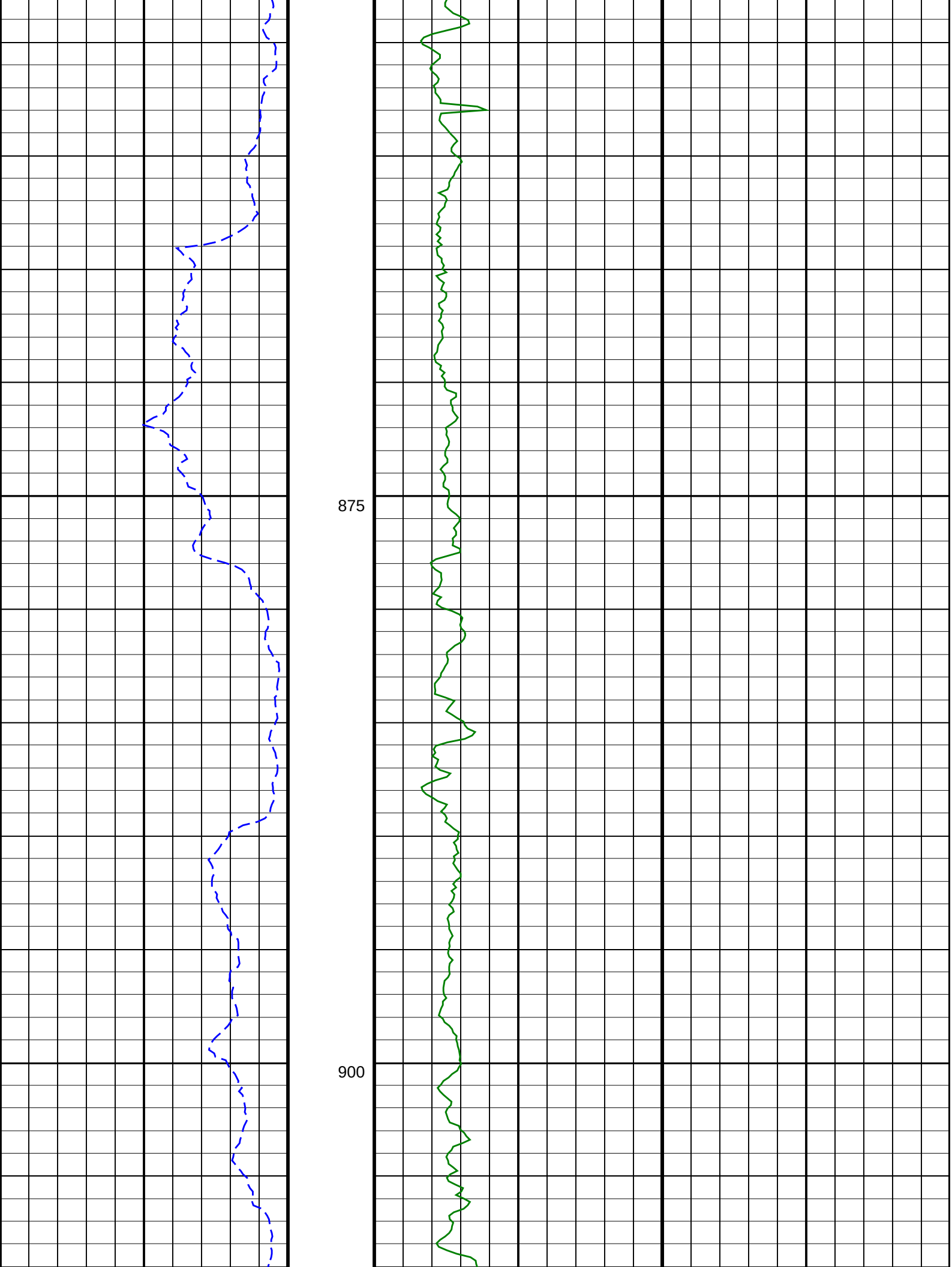
Maximum string diameter 8.50 in.

All lengths in Meters

BMA A6A RT 1:200 TVD

IDEAL Version: ID11_0C_01 <TVD> Vertical Scale: 1:200 Graphics File Created: 15−Feb−2006 00:25

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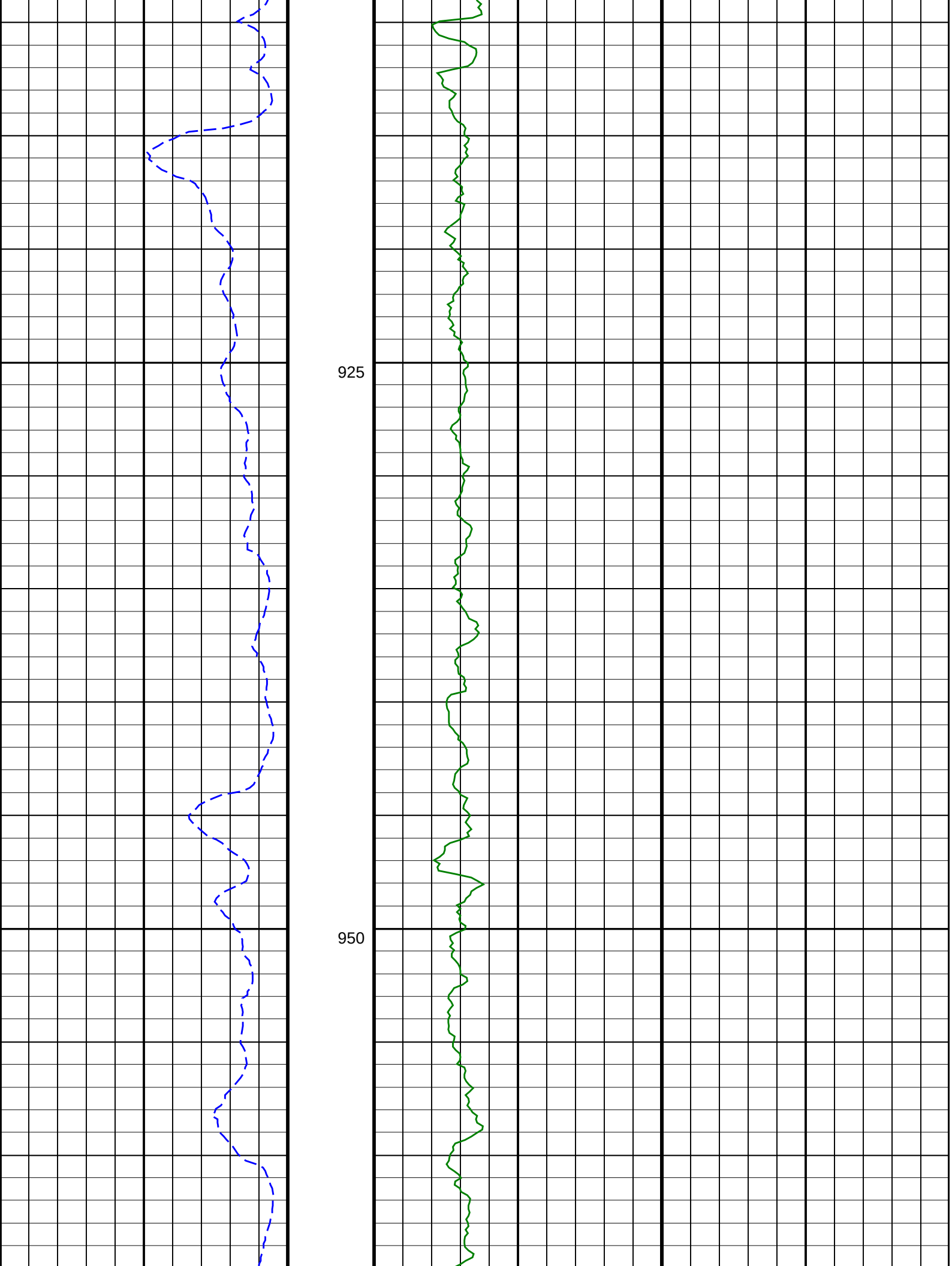
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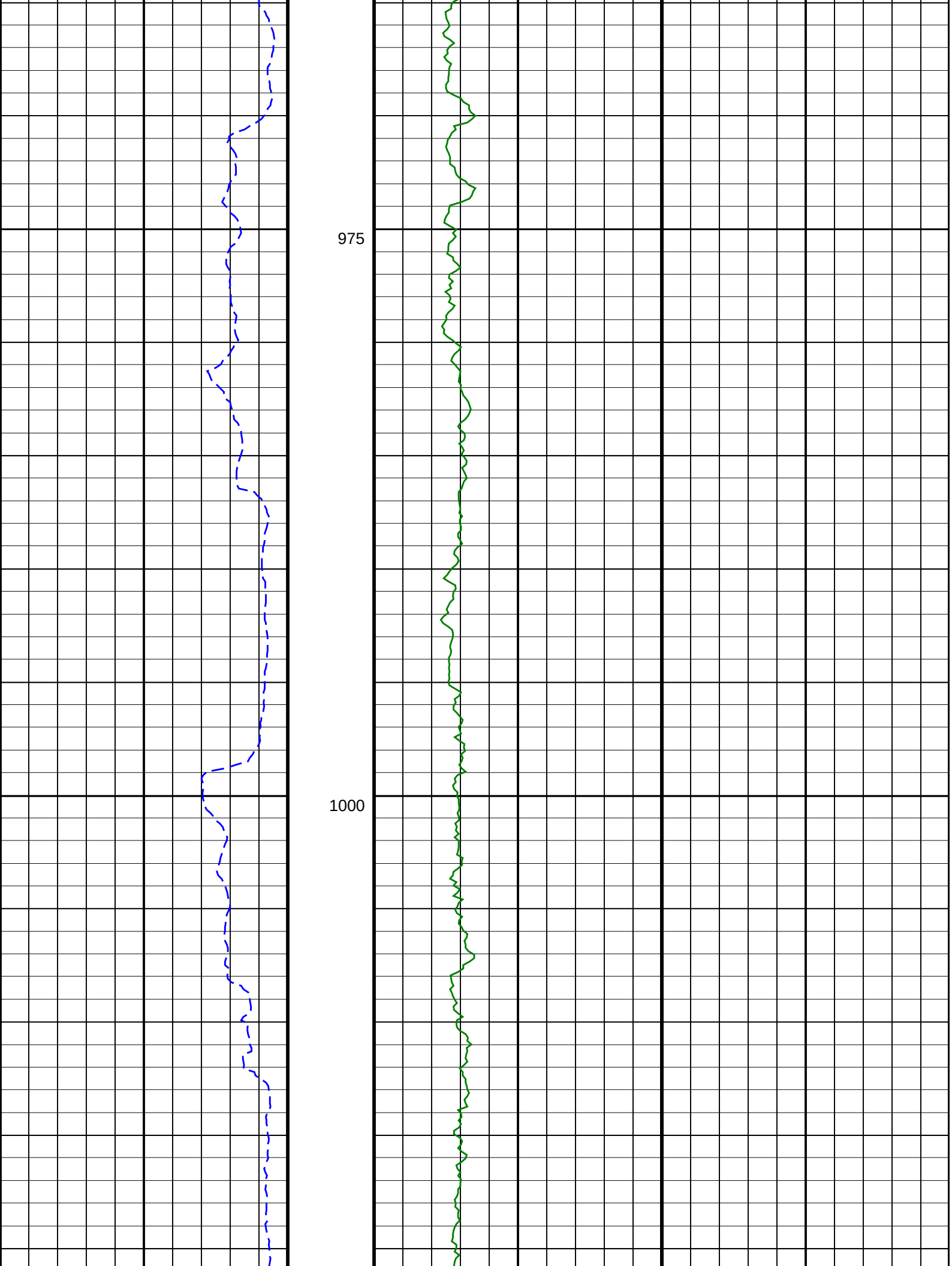
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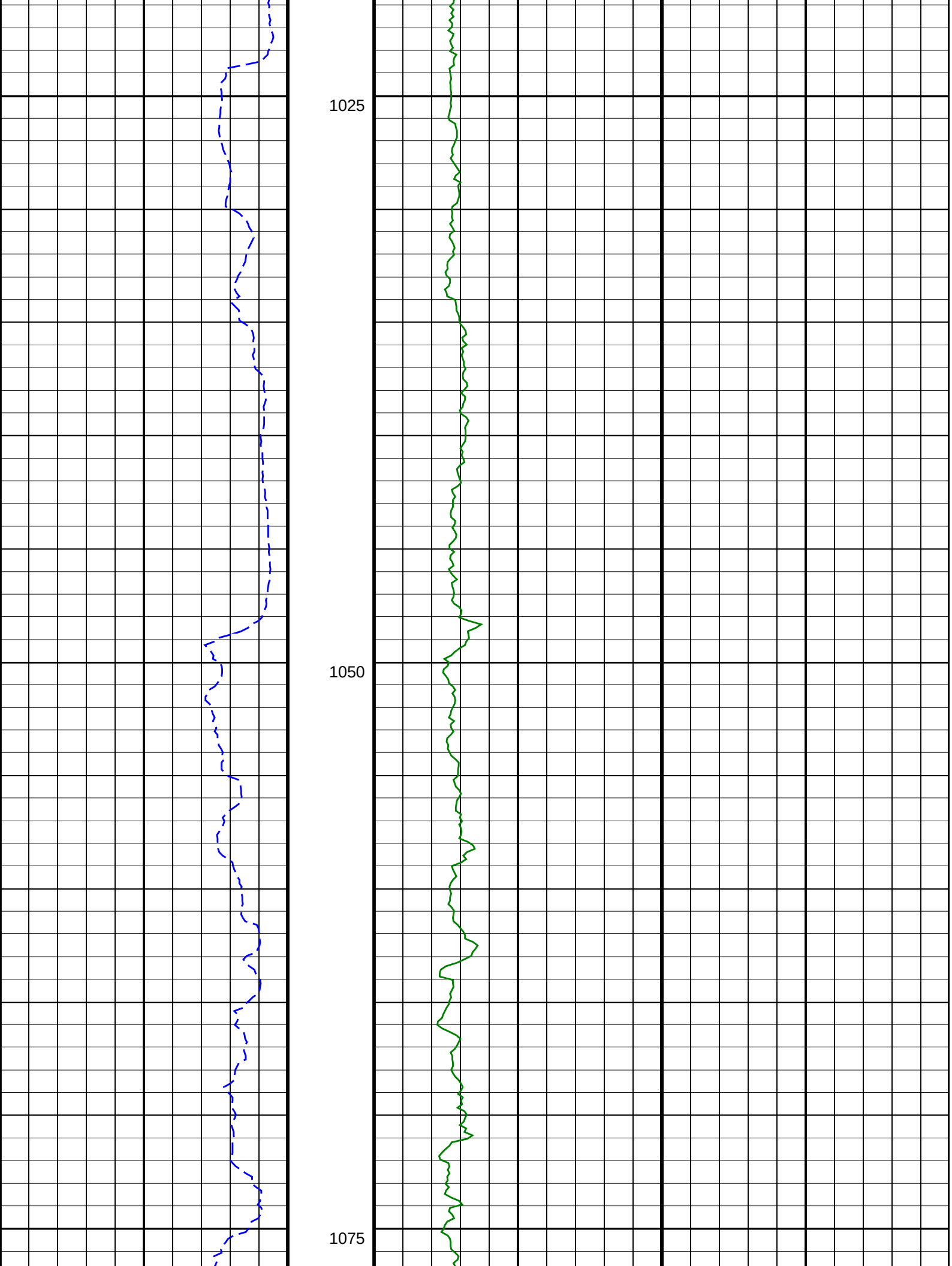
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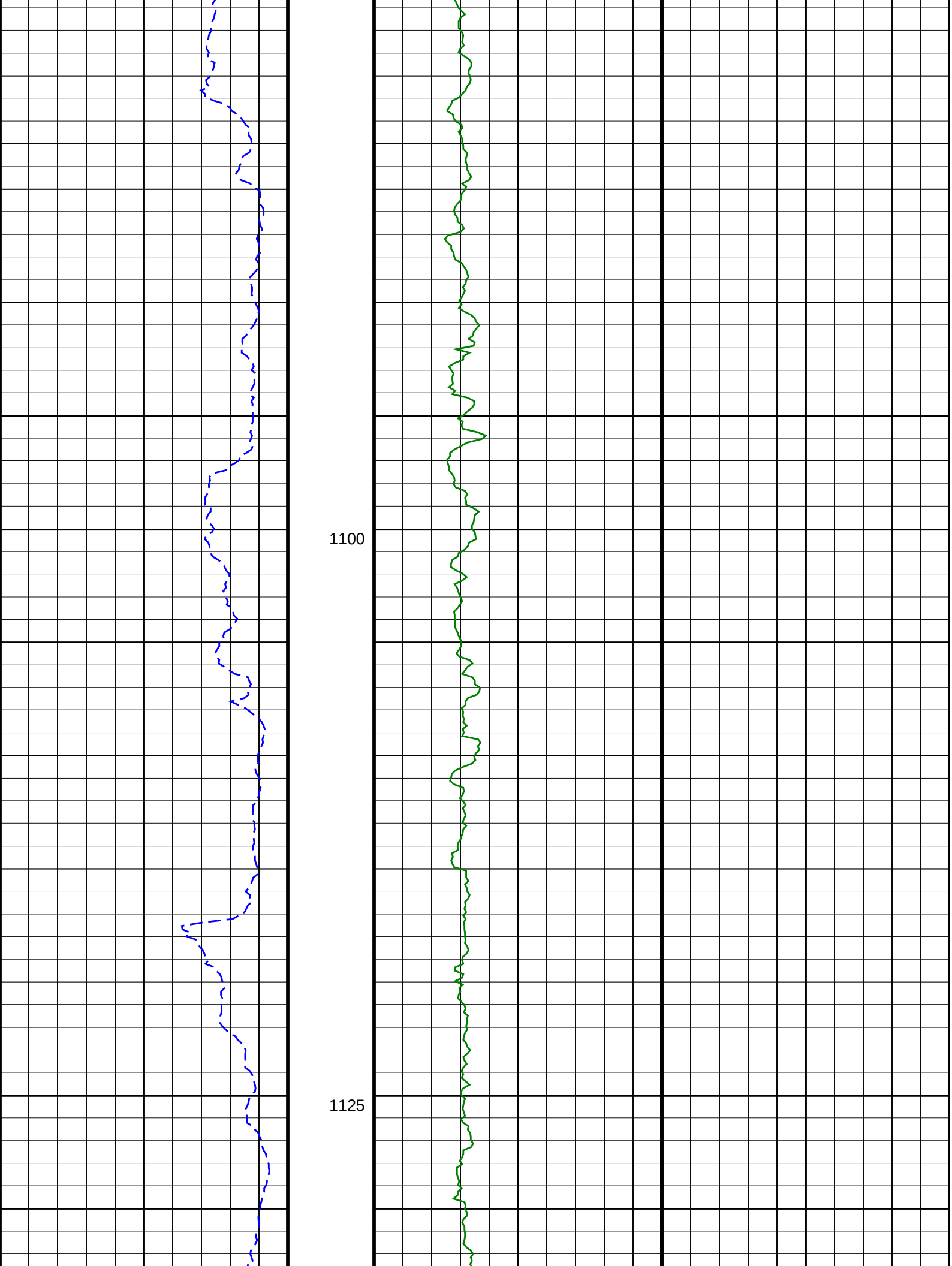
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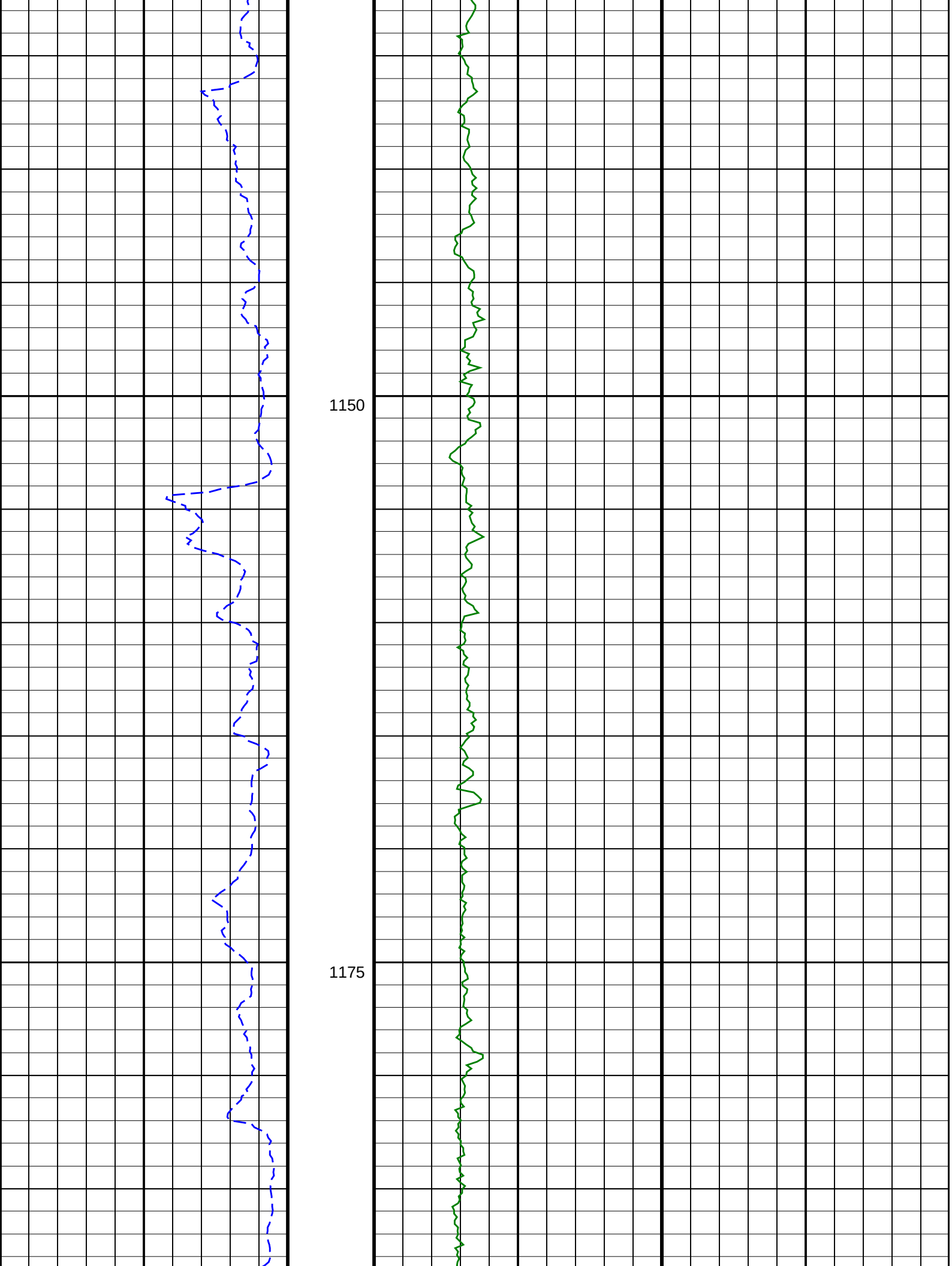
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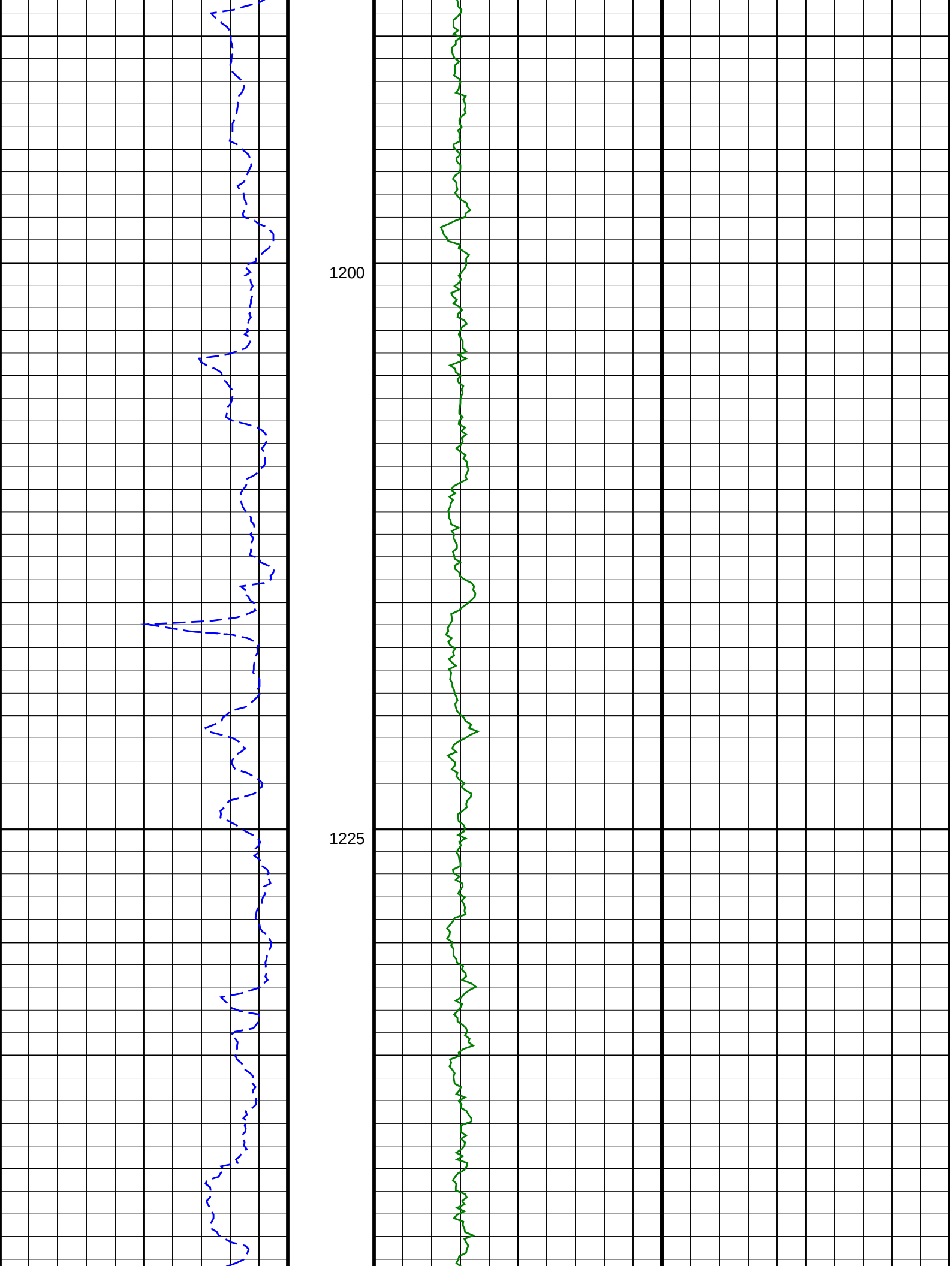
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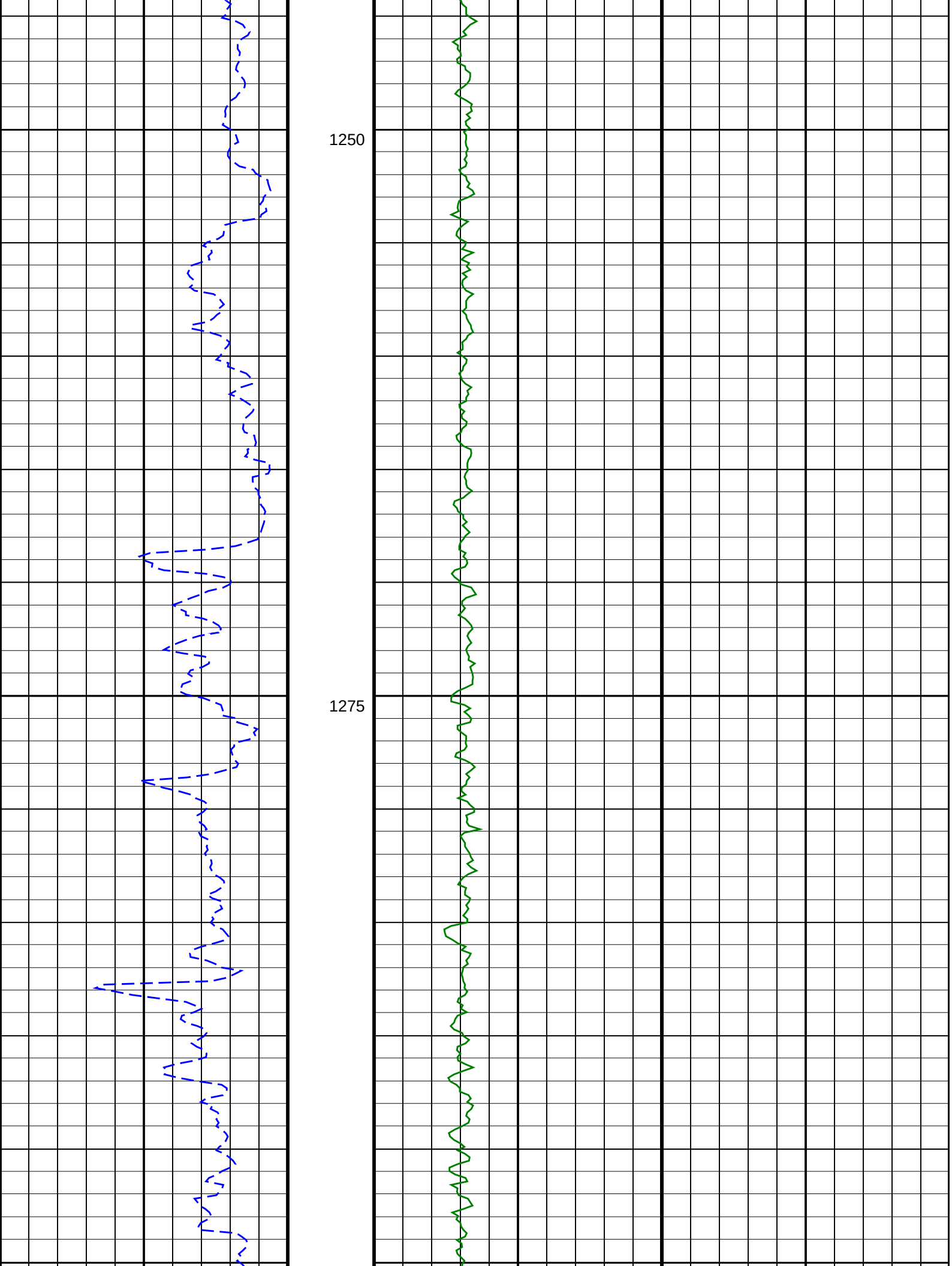
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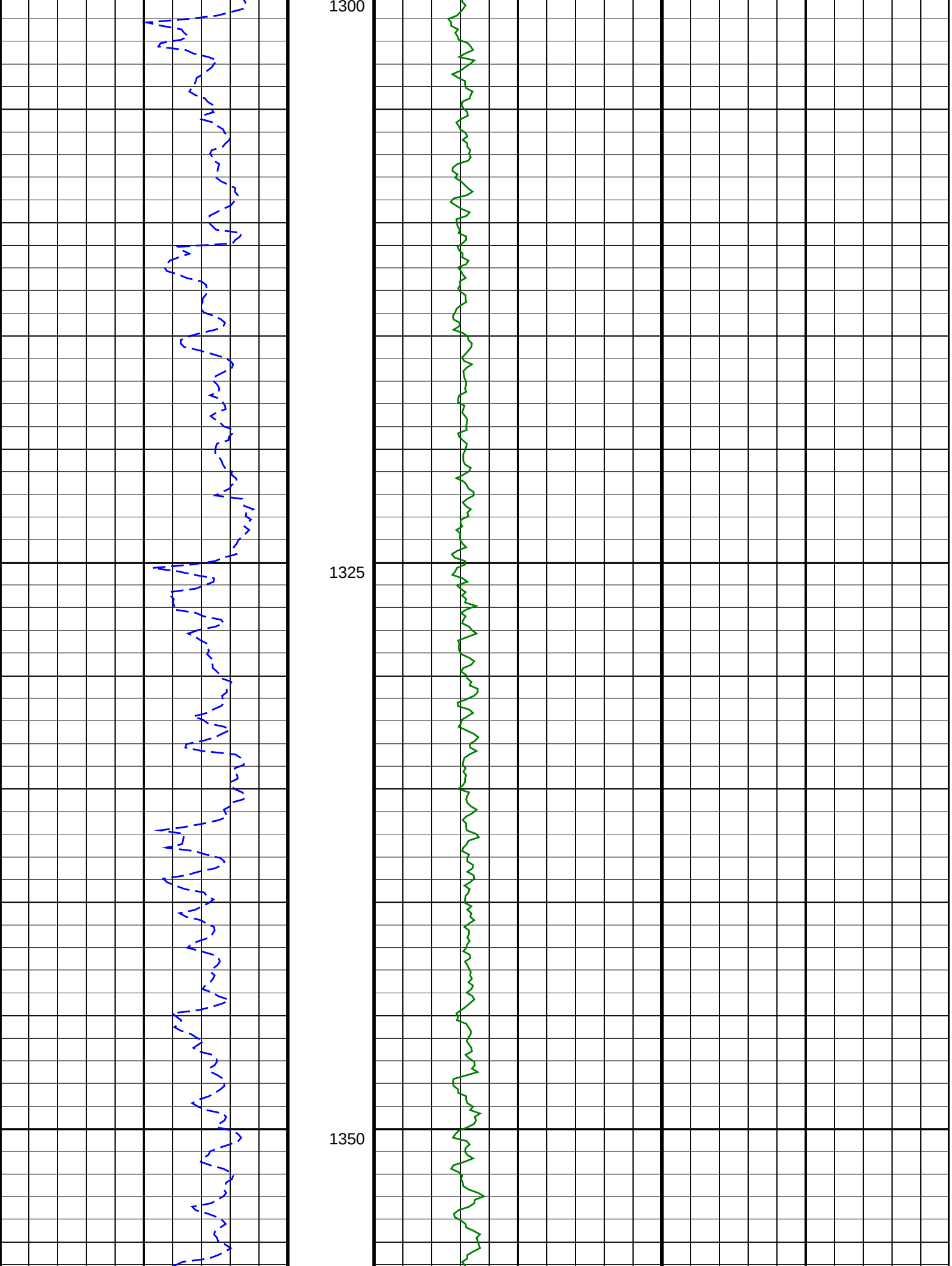
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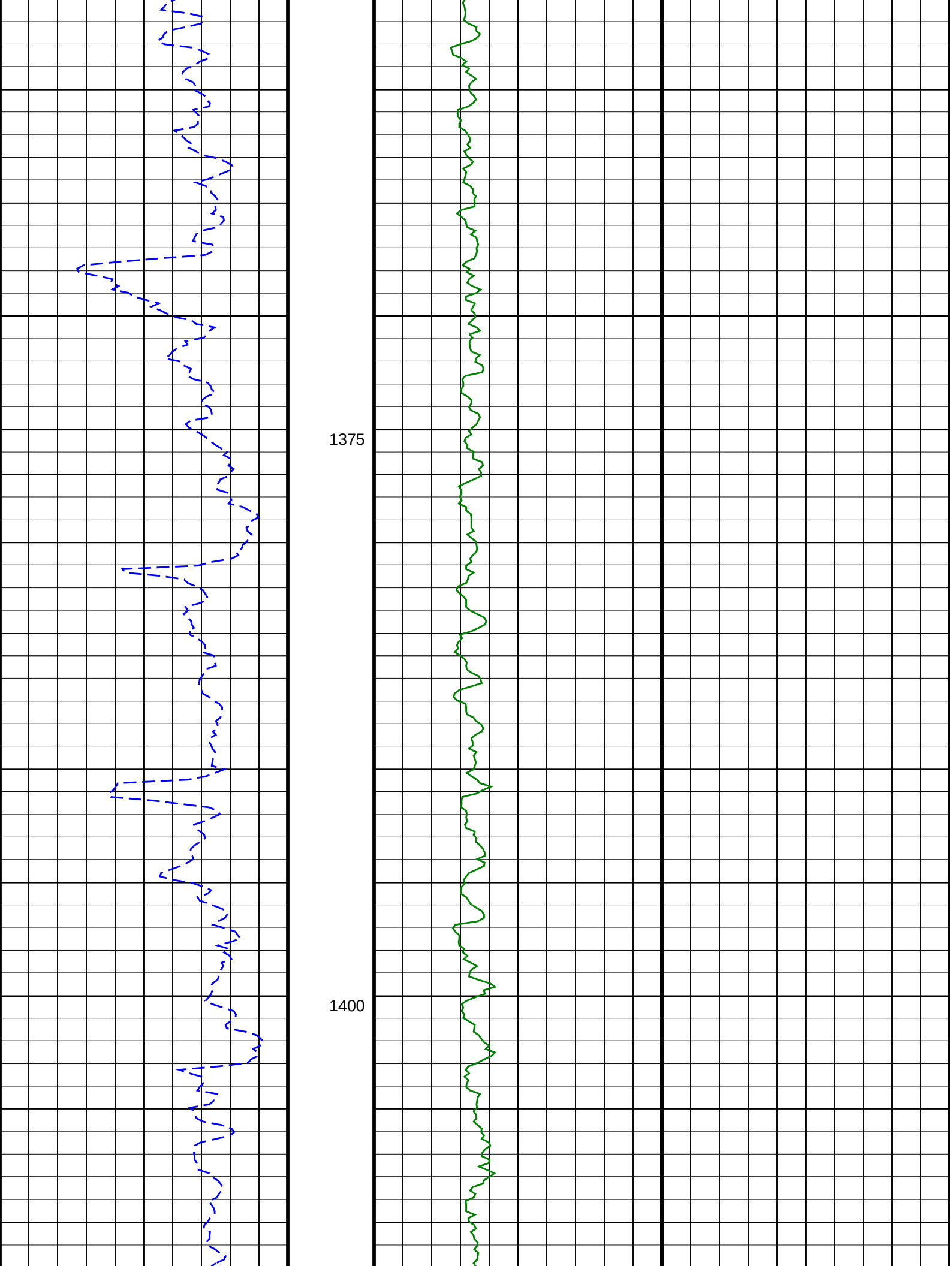
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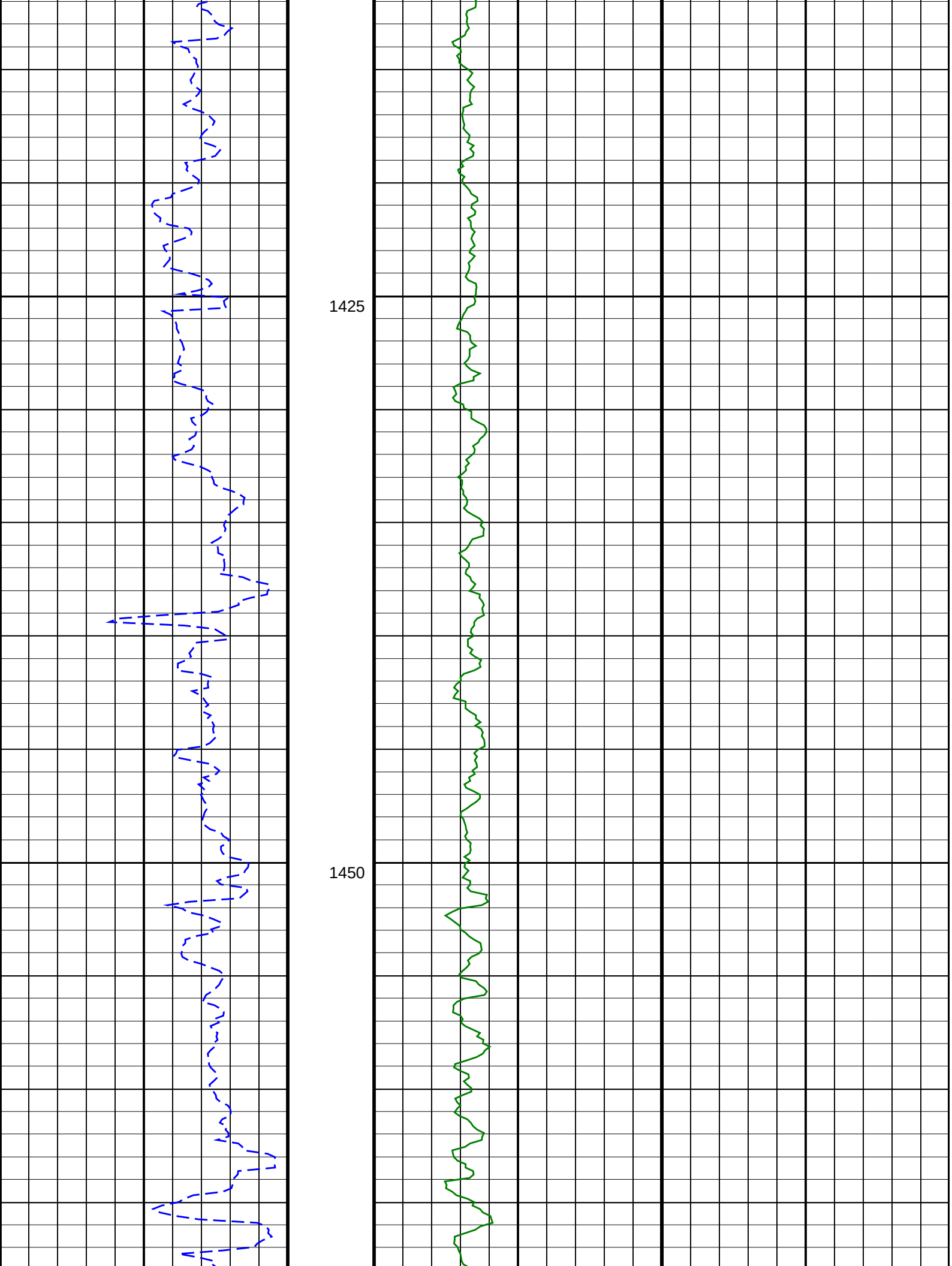
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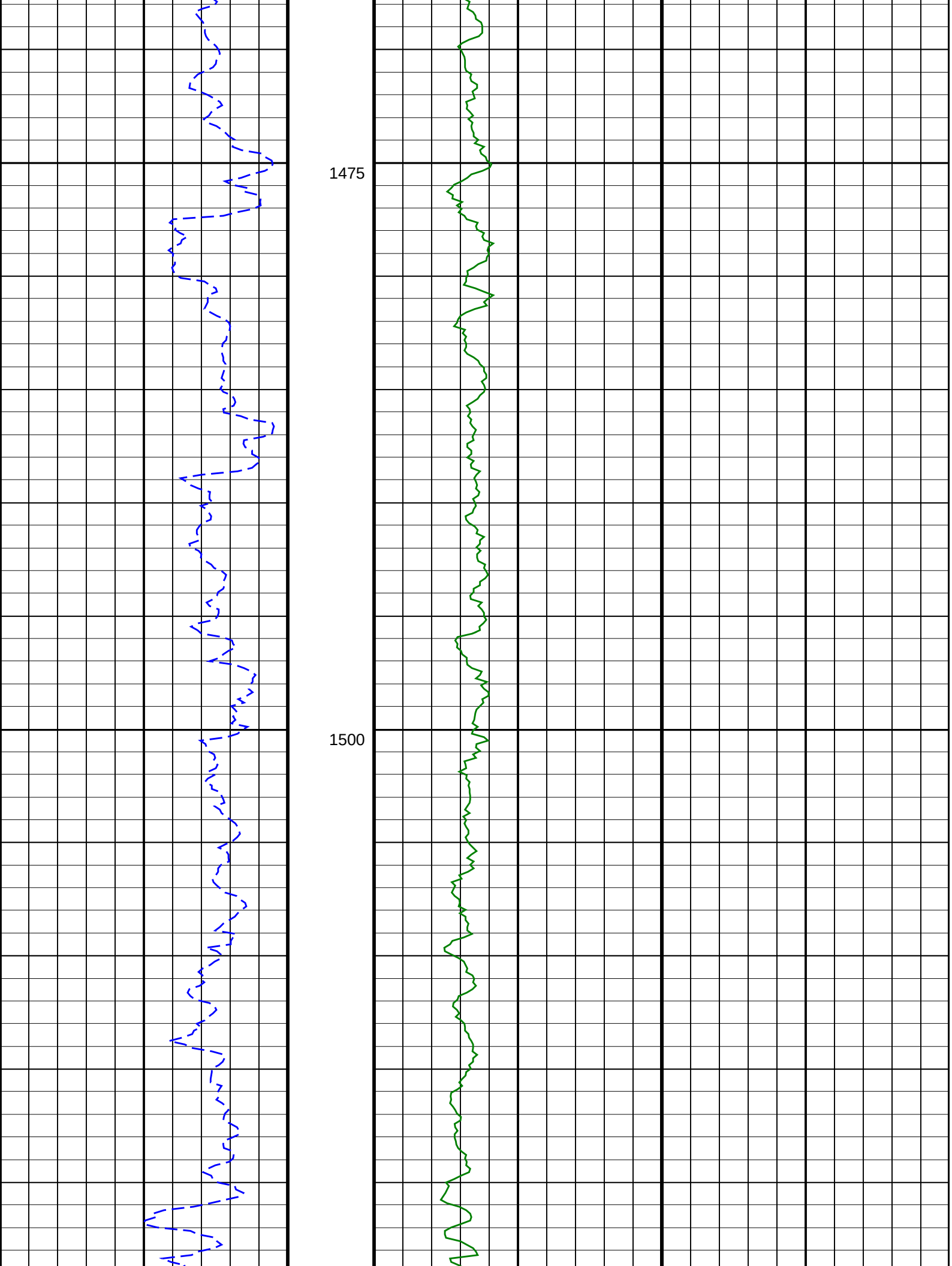
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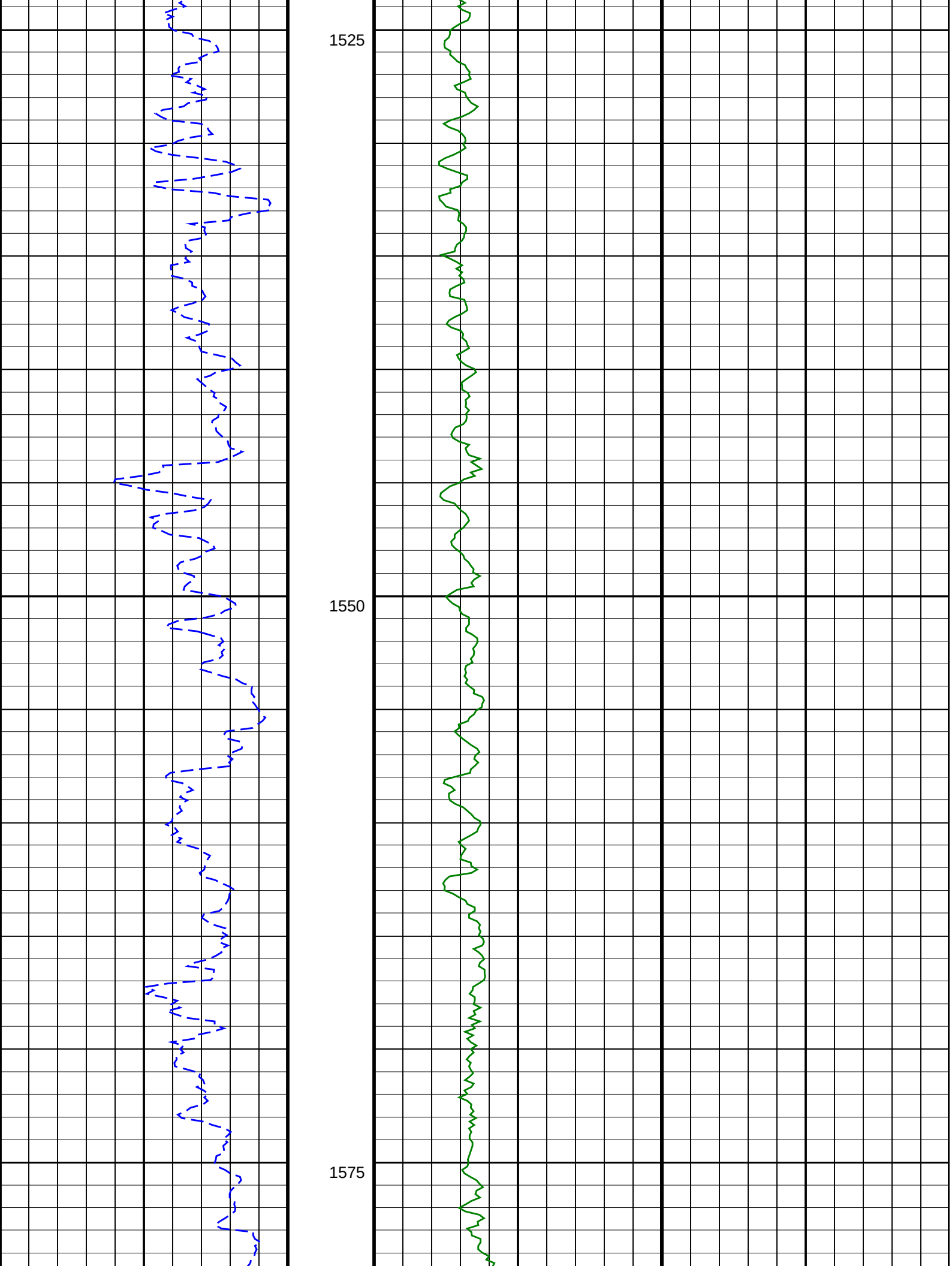
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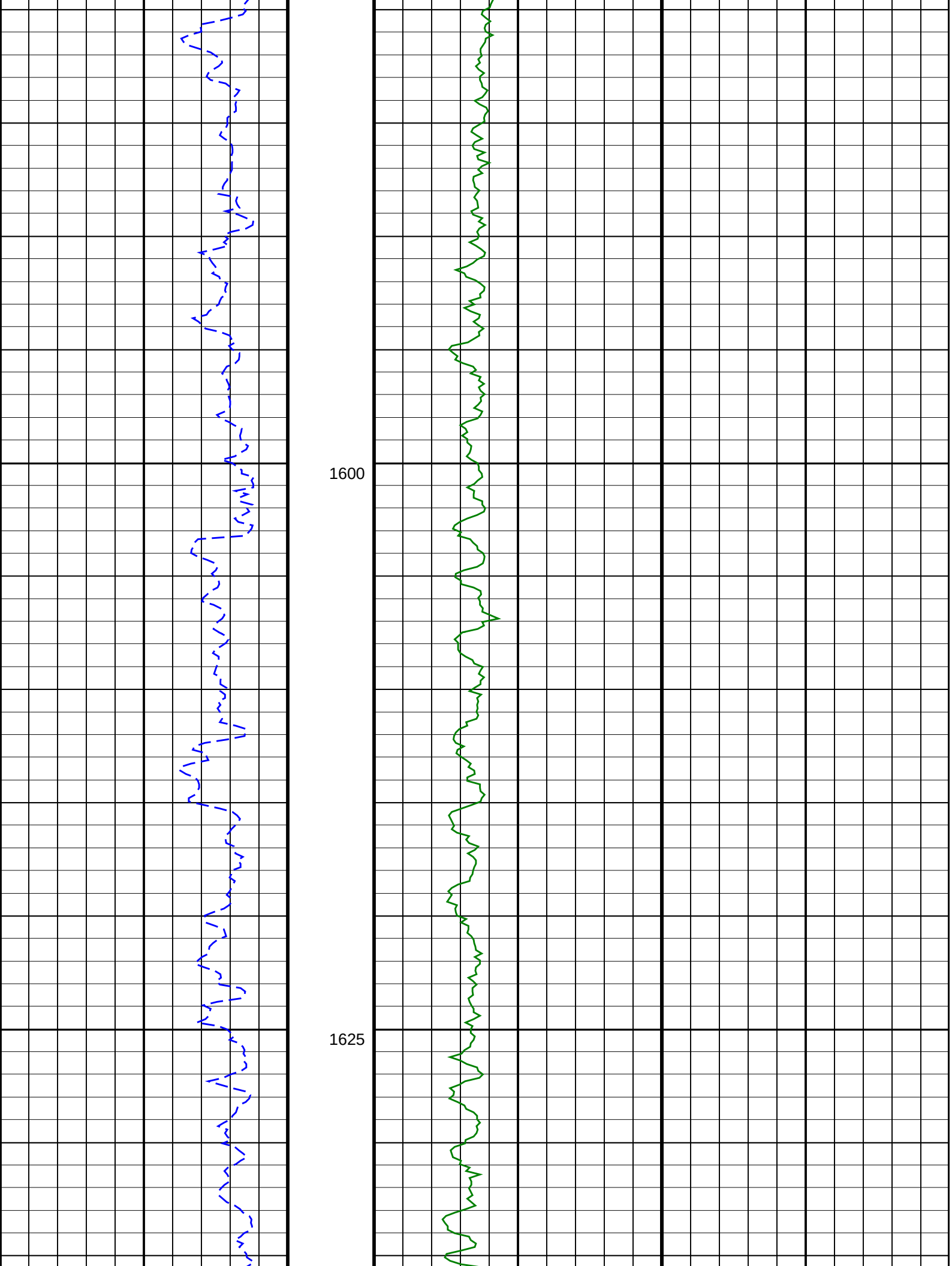
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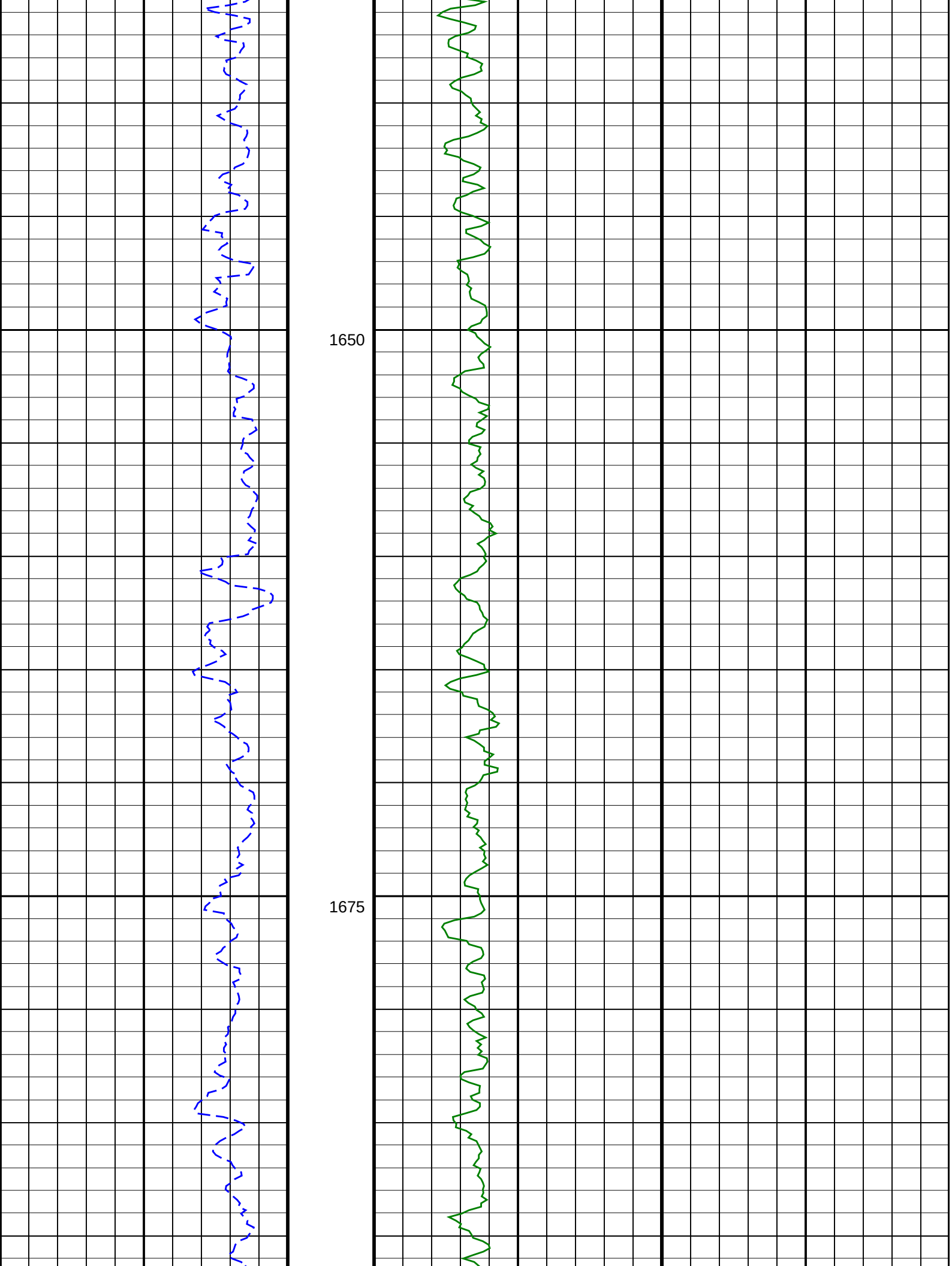
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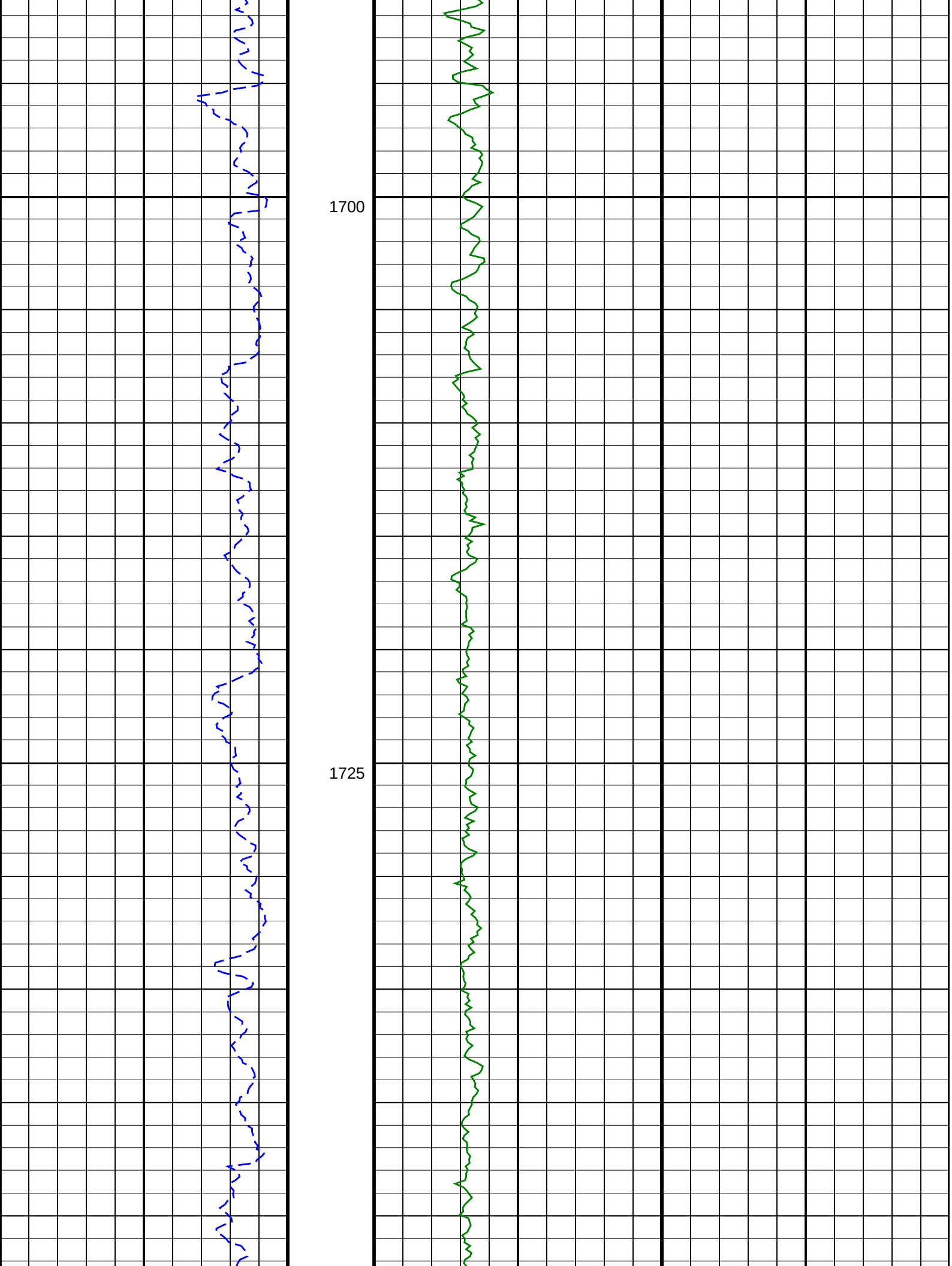
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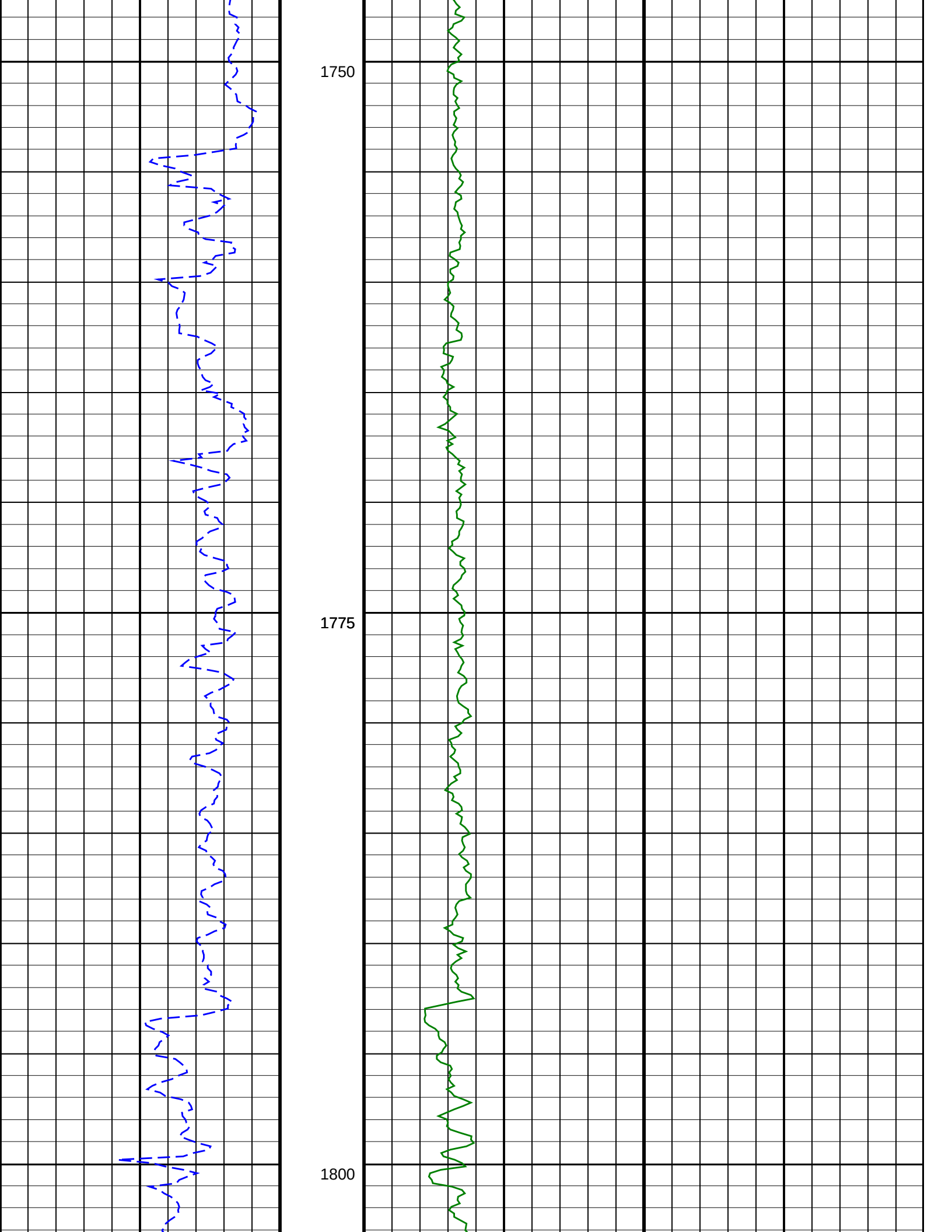
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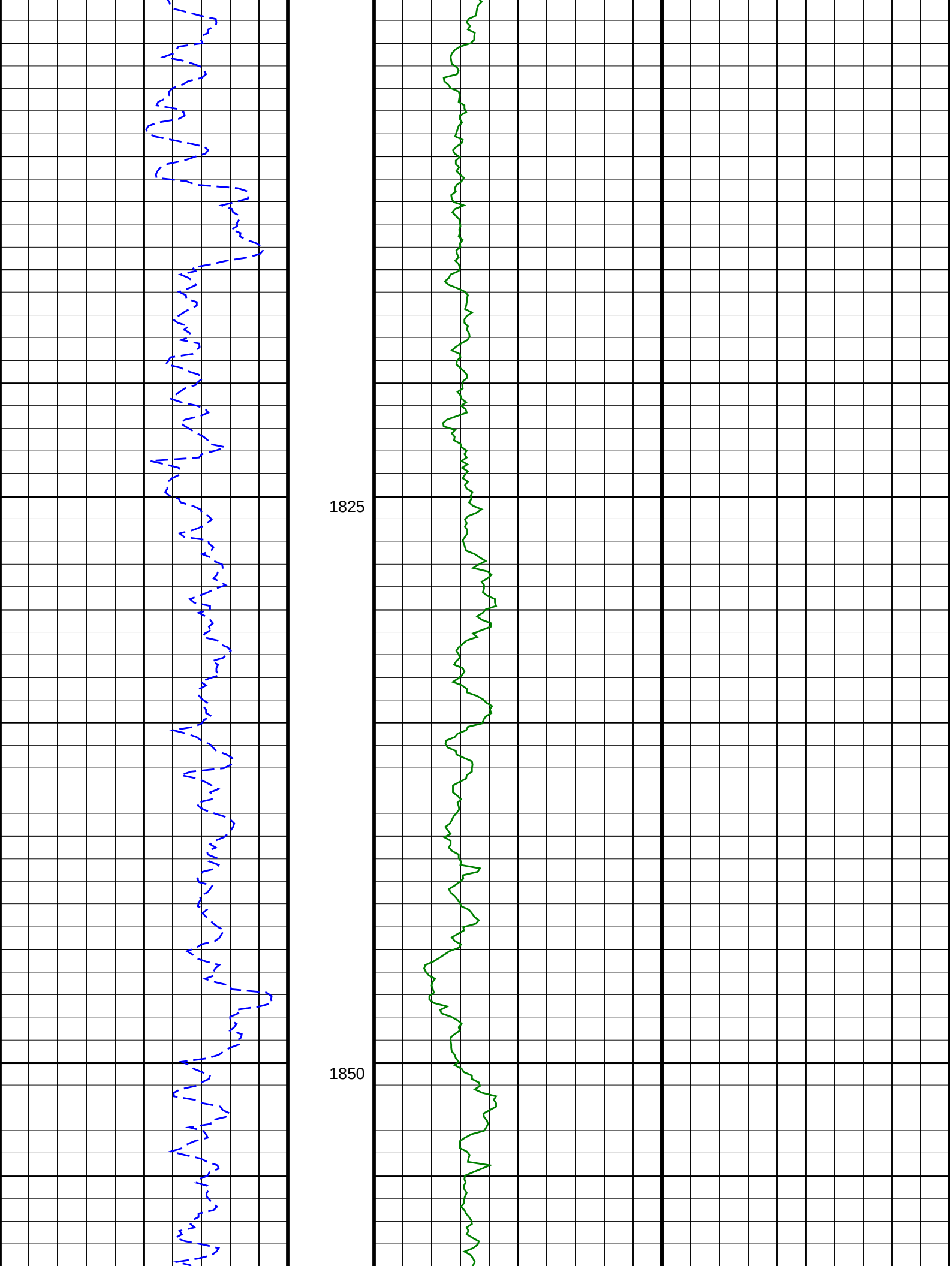
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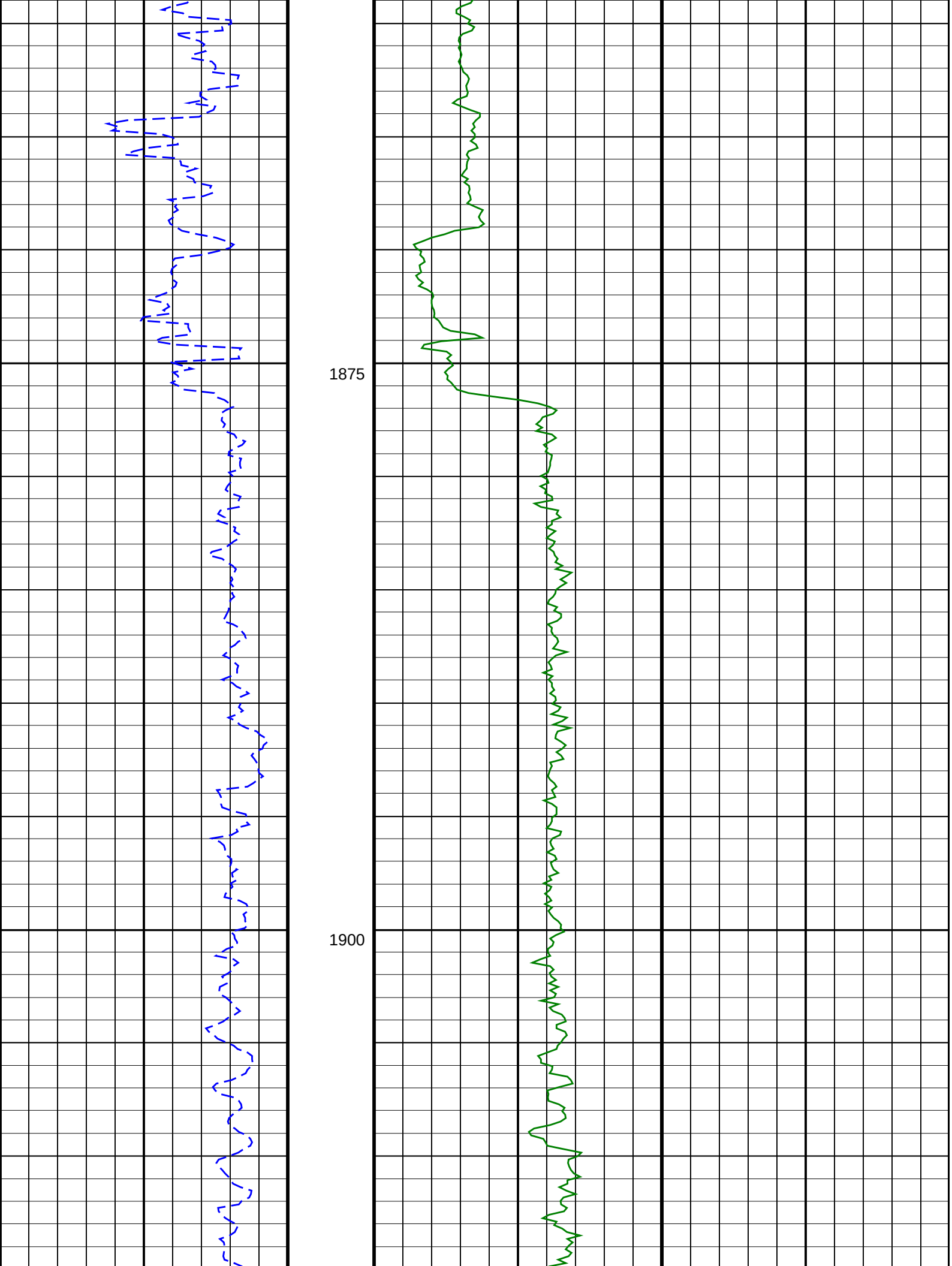
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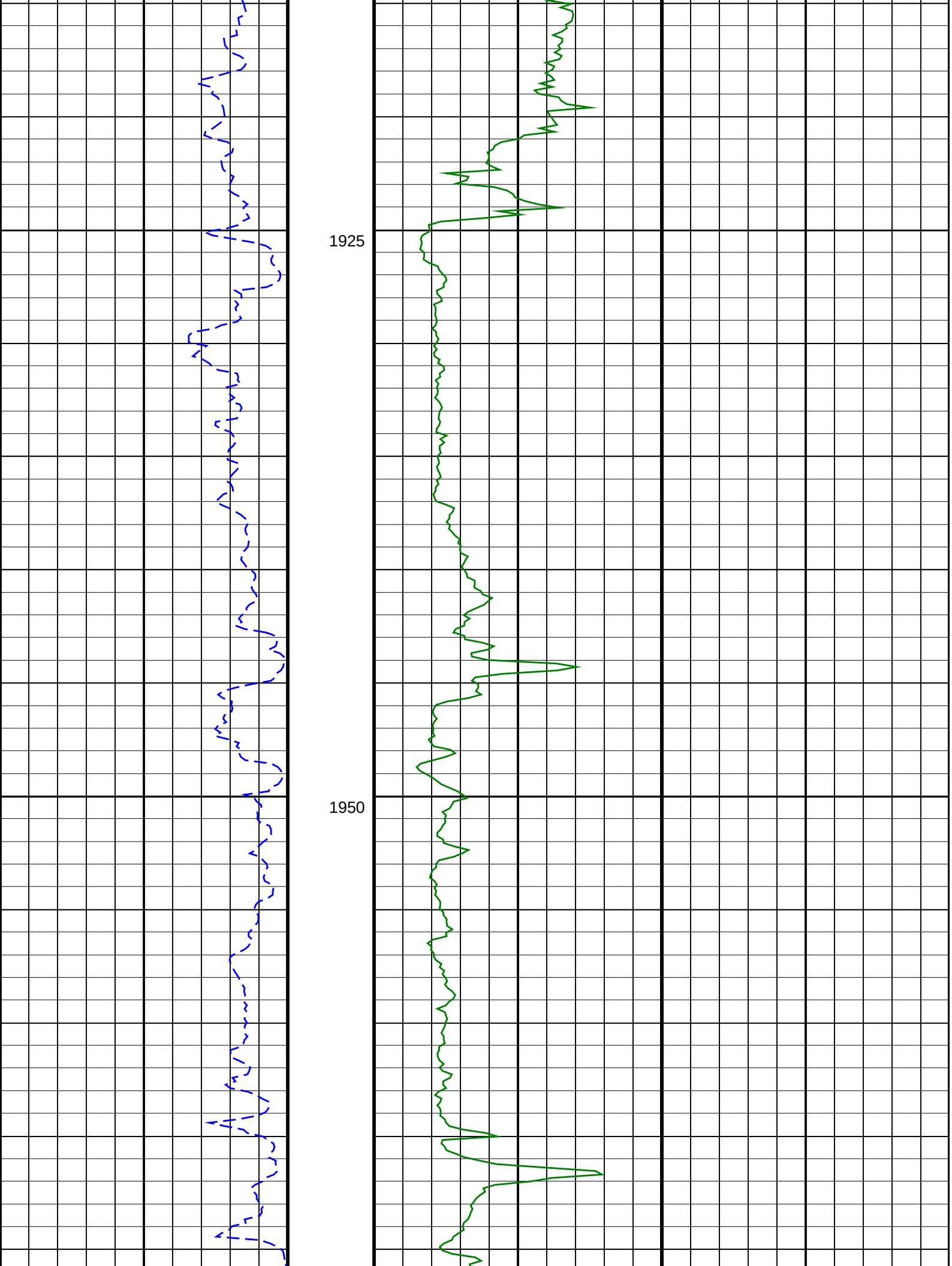
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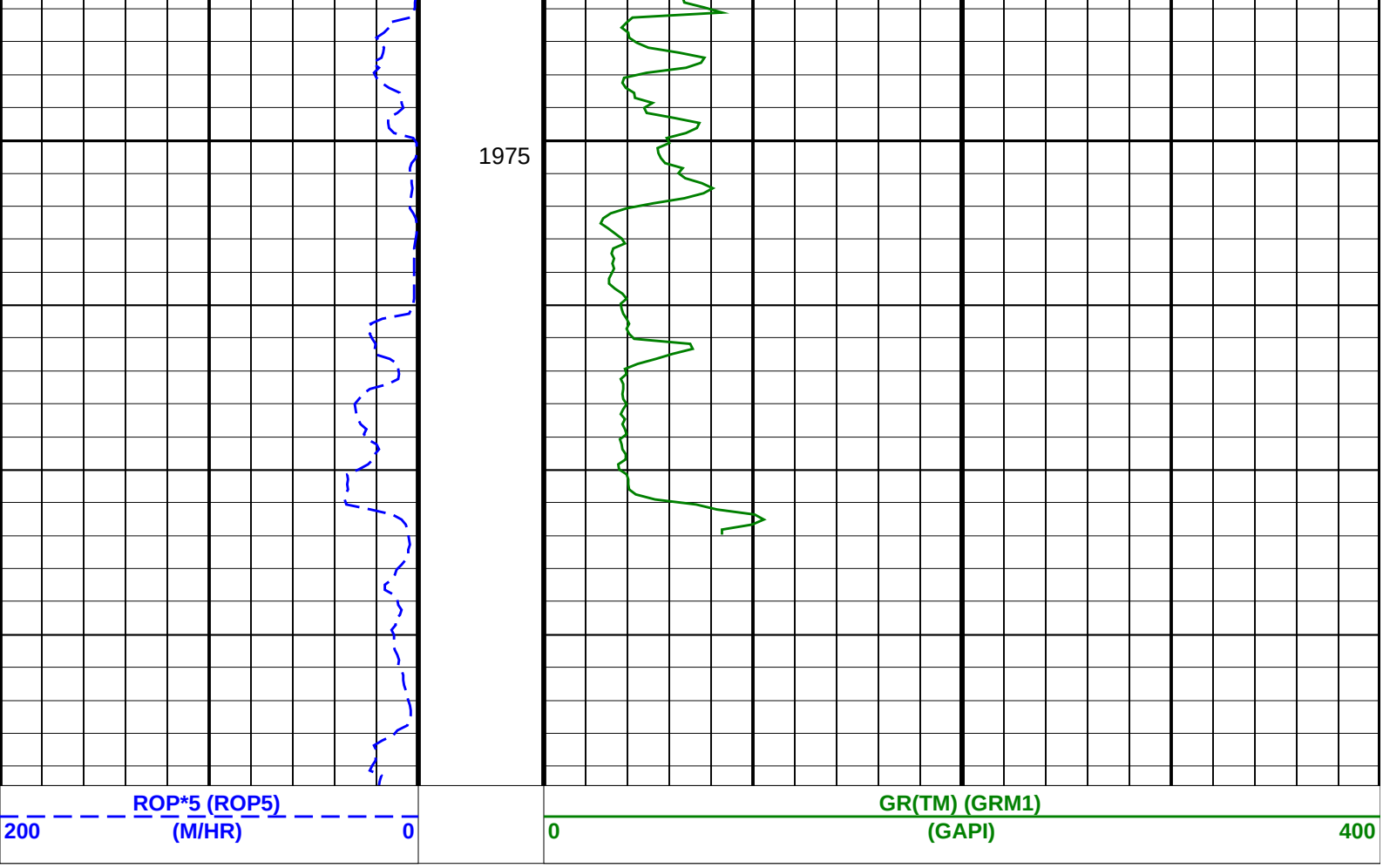

SCHLUMBERGER

Survey report 12-Feb-2006 21:25:04 Page 1 of 4

Client.....: ESSO Australia Pty. Ltd.
Field.....: Bream A

Well.....: BMA A6A
API number.....:
Engineer.....: L. Johnston/ B. Pattarakorn

Rig:.....: 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.....: Top Drive
DF above permanent.....: 32.82 m

----- Vertical section origin-----
Latitude (+N/S-).....: -0.97 m
Departure (+E/W-).....: 10.62 m

Azimuth from Vsect Origin to target: 131.68 degrees

Spud date.....: 1-Feb-06
Last survey date.....: 12-Feb-06
Total accepted surveys...: 86
MD of first survey.....: 852.58 m
MD of last survey.....: 3256.00 m

----- Geomagnetic data -----
Magnetic model.....: BGGM version 2005
Magnetic date.....: 31-Jan-2006
Magnetic field strength..: 1202.69 HCNT
Magnetic dec (+E/W-).....: 13.07 degrees
Magnetic dip.....: -69.04 degrees

----- MWD survey Reference Criteria -----
Reference G.....: 1000.05 mGal
Reference H.....: 1202.69 HCNT
Reference Dip.....: -69.04 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.07 degrees
Grid convergence (+E/W-).: -0.48 degrees
Total az corr (+E/W-).....: 13.55 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 (m)	At Azim (deg)	DLS (deg/ 100f)	Srvy tool type	Tool Corr (deg)
1	855.00	22.13	38.44	0.00	807.97	-28.29	199.01	150.79	249.69	37.15	0.00	TIP	None
2	881.48	18.78	55.18	26.48	832.80	-27.58	205.36	157.40	258.74	37.47	7.72	MWD	None

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)
3	910.21	18.78	69.84	28.73	860.01	-24.31	209.59	165.54	267.08	38.30	4.99	MWD	None
4	938.83	20.33	77.43	28.62	886.99	-19.23	212.26	174.72	274.92	39.46	3.17	MWD	None
5	967.54	20.08	85.18	28.71	913.93	-12.93	213.76	184.50	282.37	40.80	2.85	MWD	None
6	996.45	20.83	93.13	28.91	941.03	-5.49	213.90	194.58	289.16	42.29	3.03	MWD	None
7	1025.13	23.00	97.88	28.68	967.64	3.16	212.85	205.22	295.67	43.95	2.98	MWD	None
8	1053.95	26.13	102.74	28.82	993.85	13.39	210.68	217.00	302.45	45.85	3.94	MWD	None
9	1082.41	28.28	109.02	28.46	1019.16	25.10	207.10	229.49	309.12	47.94	3.84	MWD	None
10	1111.11	30.81	115.02	28.70	1044.13	38.42	201.78	242.58	315.53	50.25	4.13	MWD	None
11	1139.28	34.11	120.35	28.17	1067.90	53.09	194.73	255.94	321.60	52.73	4.72	MWD	None
12	1168.44	38.85	125.48	29.16	1091.35	70.21	185.28	270.45	327.83	55.59	5.89	MWD	None
13	1197.36	43.23	127.94	28.92	1113.16	89.12	173.92	285.66	334.44	58.67	4.92	MWD	None
14	1226.15	47.11	129.25	28.79	1133.45	109.50	161.18	301.61	341.98	61.88	4.22	MWD	None
15	1254.76	50.44	130.82	28.61	1152.30	131.01	147.34	318.08	350.54	65.15	3.76	MWD	None
16	1283.33	53.02	132.06	28.57	1170.00	153.44	132.49	334.89	360.14	68.41	2.94	MWD	None
17	1311.72	55.20	133.75	28.39	1186.64	176.43	116.83	351.73	370.62	71.63	2.76	MWD	None
18	1340.66	57.84	135.42	28.94	1202.61	200.53	99.89	368.91	382.20	74.85	3.14	MWD	None
19	1368.90	60.92	137.54	28.24	1216.99	224.74	82.26	385.64	394.32	77.96	3.86	MWD	None
20	1397.94	64.27	139.51	29.04	1230.35	250.34	62.95	402.71	407.59	81.12	3.97	MWD	None
21	1426.45	64.06	140.07	28.51	1242.78	275.74	43.35	419.27	421.51	84.10	0.58	MWD	None
22	1455.43	64.16	140.75	28.98	1255.43	301.51	23.26	435.89	436.51	86.95	0.65	MWD	None
23	1484.13	65.48	142.60	28.70	1267.64	327.08	2.88	451.99	452.00	89.63	2.26	MWD	None
24	1511.98	67.02	143.27	27.85	1278.86	352.08	-17.46	467.35	467.68	92.14	1.81	MWD	None
25	1541.35	66.02	143.55	29.37	1290.56	378.46	-39.09	483.41	484.99	94.62	1.07	MWD	None
26	1570.07	66.51	143.32	28.72	1302.12	404.20	-60.20	499.07	502.69	96.88	0.57	MWD	None
27	1598.78	65.51	143.66	28.71	1313.79	429.87	-81.29	514.68	521.06	98.97	1.11	MWD	None
28	1627.50	66.46	143.22	28.72	1325.48	455.56	-102.36	530.30	540.09	100.92	1.09	MWD	None
29	1656.24	68.20	142.15	28.74	1336.56	481.59	-123.45	546.38	560.15	102.73	2.12	MWD	None
30	1685.21	67.65	141.97	28.97	1347.45	507.99	-144.62	562.89	581.17	104.41	0.60	MWD	None

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	1713.71	66.62	142.15	28.50	1358.52	533.82	-165.33	579.03	602.17	105.94	1.12	MWD	None
32	1742.37	65.58	141.77	28.66	1370.13	559.61	-185.97	595.18	623.55	107.35	1.17	MWD	None
33	1771.02	66.71	141.83	28.65	1381.72	585.40	-206.56	611.38	645.33	108.67	1.20	MWD	None
34	1799.85	66.10	141.87	28.83	1393.26	611.40	-227.33	627.70	667.60	109.91	0.65	MWD	None
35	1828.44	66.44	140.68	28.59	1404.76	637.21	-247.75	644.08	690.08	111.04	1.22	MWD	None
36	1857.37	65.55	140.51	28.93	1416.53	663.32	-268.17	660.85	713.19	112.09	0.95	MWD	None
37	1885.96	64.70	140.40	28.59	1428.56	688.95	-288.17	677.37	736.12	113.05	0.91	MWD	None
38	1914.62	64.16	140.81	28.66	1440.93	714.49	-308.15	693.77	759.13	113.95	0.70	MWD	None
39	**1943.46**	**63.94**	**141.25**	**28.84**	**1453.55**	**740.08**	**-328.31**	**710.08**	**782.31**	**114.81**	**0.48**	**MWD**	**None**
40	**1972.06**	**64.86**	**141.60**	**28.60**	**1465.91**	**765.50**	**-348.48**	**726.16**	**805.45**	**115.64**	**1.04**	**MWD**	**None**
41	2000.68	65.73	142.18	28.62	1477.87	791.09	-368.93	742.21	828.85	116.43	1.08	MWD	None
42	2029.25	66.36	142.54	28.57	1489.47	816.74	-389.61	758.16	852.40	117.20	0.76	MWD	None
43	2058.02	67.04	142.41	28.77	1500.85	842.70	-410.57	774.25	876.37	117.94	0.73	MWD	None
44	2086.64	66.46	142.89	28.62	1512.15	868.52	-431.47	790.20	900.33	118.64	0.78	MWD	None
45	2115.53	65.55	142.90	28.89	1523.89	894.41	-452.52	806.13	924.45	119.31	0.96	MWD	None
46	2144.17	66.81	142.63	28.64	1535.46	920.12	-473.38	821.98	948.54	119.94	1.37	MWD	None
47	2172.93	66.02	142.94	28.76	1546.97	945.98	-494.37	837.92	972.89	120.54	0.89	MWD	None
48	2201.71	67.06	142.31	28.78	1558.43	971.90	-515.35	853.95	997.40	121.11	1.26	MWD	None
49	2230.49	66.02	142.54	28.78	1569.88	997.84	-536.27	870.05	1022.04	121.65	1.12	MWD	None
50	2259.36	67.28	142.77	28.87	1581.33	1023.86	-557.34	886.12	1046.83	122.17	1.35	MWD	None
51	2287.95	66.49	142.90	28.59	1592.55	1049.66	-578.30	902.01	1071.47	122.66	0.85	MWD	None
52	2317.02	67.71	142.78	29.07	1603.86	1075.93	-599.64	918.18	1096.64	123.15	1.28	MWD	None
53	2345.67	66.69	142.94	28.65	1614.96	1101.84	-620.69	934.13	1121.54	123.60	1.10	MWD	None
54	2374.43	65.89	142.90	28.76	1626.53	1127.67	-641.70	950.01	1146.42	124.04	0.85	MWD	None
55	2403.15	65.42	143.10	28.72	1638.37	1153.32	-662.60	965.75	1171.20	124.45	0.53	MWD	None
56	2432.09	64.65	142.95	28.94	1650.58	1179.05	-683.56	981.53	1196.10	124.85	0.82	MWD	None
57	2461.14	65.00	142.89	29.05	1662.94	1204.83	-704.53	997.39	1221.12	125.24	0.37	MWD	None
58	2489.80	66.75	142.15	28.66	1674.65	1230.52	-725.29	1013.30	1246.12	125.59	1.99	MWD	None
59	2518.74	65.94	142.01	28.94	1686.26	1256.59	-746.20	1029.59	1271.56	125.93	0.86	MWD	None
60	2547.55	65.46	142.02	28.81	1698.12	1282.42	-766.89	1045.75	1296.81	126.25	0.51	MWD	None

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)
61	2576.63	64.89	141.84	29.08	1710.33	1308.40	-787.67	1062.03	1322.24	126.56	0.62	MWD	None
62	2605.56	65.50	141.77	28.93	1722.47	1334.25	-808.31	1078.26	1347.60	126.86	0.65	MWD	None
63	2634.29	66.82	141.67	28.73	1734.08	1360.12	-828.94	1094.54	1373.01	127.14	1.40	MWD	None
64	2660.88	66.24	141.89	26.59	1744.67	1384.14	-848.10	1109.63	1396.62	127.39	0.70	MWD	None
65	2689.20	65.60	141.78	28.32	1756.22	1409.59	-868.43	1125.61	1421.68	127.65	0.70	MWD	None
66	2718.44	67.23	142.44	29.24	1767.92	1435.94	-889.57	1142.07	1447.64	127.92	1.81	MWD	None
67	2746.94	66.54	142.64	28.50	1779.11	1461.68	-910.38	1158.01	1473.02	128.17	0.76	MWD	None
68	2775.66	65.76	142.26	28.72	1790.72	1487.49	-931.21	1174.02	1498.49	128.42	0.91	MWD	None
69	2804.34	64.95	142.33	28.68	1802.68	1513.11	-951.83	1189.96	1523.81	128.66	0.86	MWD	None
70	2832.94	66.35	142.38	28.60	1814.47	1538.71	-972.46	1205.87	1549.13	128.88	1.49	MWD	None
71	2861.63	65.67	142.19	28.69	1826.14	1564.48	-993.20	1221.91	1574.64	129.11	0.75	MWD	None
72	2890.41	65.13	142.02	28.78	1838.12	1590.21	-1013.85	1237.98	1600.15	129.32	0.59	MWD	None
73	2918.90	66.35	141.65	28.49	1849.82	1615.78	-1034.27	1254.03	1625.52	129.51	1.35	MWD	None
74	2947.54	66.26	141.88	28.64	1861.33	1641.60	-1054.87	1270.26	1651.15	129.71	0.24	MWD	None
75	2975.95	66.04	141.64	28.41	1872.82	1667.18	-1075.28	1286.34	1676.57	129.89	0.33	MWD	None

76	3004.70	65.63	141.74	28.75	1884.59	1693.01	-1095.86	1302.61	1702.26	130.07	0.45	MWD	None
77	3033.57	65.06	141.16	28.87	1896.63	1718.87	-1116.38	1318.96	1727.99	130.24	0.82	MWD	None
78	3062.00	64.59	141.98	28.43	1908.73	1744.22	-1136.53	1334.95	1753.22	130.41	0.94	MWD	None
79	3090.72	64.37	141.76	28.72	1921.10	1769.73	-1156.92	1350.95	1778.63	130.58	0.31	MWD	None
80	3119.45	64.04	141.80	28.73	1933.60	1795.19	-1177.24	1366.96	1804.01	130.74	0.35	MWD	None
81	3148.18	64.00	141.66	28.73	1946.19	1820.62	-1197.52	1382.95	1829.37	130.89	0.14	MWD	None
82	3176.79	63.78	141.55	28.61	1958.78	1845.93	-1217.65	1398.91	1854.62	131.04	0.26	MWD	None
83	3205.75	63.12	141.38	28.96	1971.72	1871.46	-1237.92	1415.05	1880.11	131.18	0.71	MWD	None
84	3234.70	62.78	140.68	28.95	1984.89	1896.90	-1257.96	1431.26	1905.51	131.31	0.75	MWD	None
85	3256.00	62.55	140.21	21.30	1994.67	1915.60	-1272.55	1443.31	1924.20	131.40	0.68	Proj. to TD	

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

Schlumberger

Well: **BMA A6A**

Field: **Bream A**

Rig: **ISDL 453**

State: **Victoria**

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