

Rig:	ISDL 453
Field:	Turrum
Location:	Bass Strait
Well:	MLA-A10AST
Company:	ESSO Australia Pty. Ltd.

Gamma Ray Service			
1:200 Measured Depth			
Real Time Log			
Location			
Total depth:	3491.0 m	K.B.	Top Drive
Spud date:	03-Sep-2004	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 = 606868.96m E	Longitude	Latitude
		E48°13'15.712"	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
REMARKS: RUN NUMBER 1 8–1/2 in. hole was drilled from 2331.7m to 2362.0m 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 for bit change	REMARKS: RUN NUMBER 2 8–1/2 in. hole was drilled from 2362.0m to 2662.0m 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 for bit change	REMARKS: RUN NUMBER 3 8–1/2 in. hole was drilled from 2662.0m to 3040.0m 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 for bit change

EQUIPMENT DESCRIPTION

RUN1

RUN2

RUN3

DOWNHOLE E

DOWNHOLE E

DOWNHOLE E

<div>6-3/4 in. Pow MDC: Z4( 42.2 deg. 45.1 deg. MGR: 29 DHS: 7.0</div> <div>D&amp;I GR</div> <div>20.1 19.4</div> <div></div>	<div>24.3</div>	<div>6-3/4 in. Pow MDC: Z4( MEC: 61 MDI: 62( MGR: 29 DHS: 7.0</div> <div>D&amp;I GR</div> <div>20.1 19.4</div> <div></div>	<div>24.3</div>	<div>6-3/4 in. Pow MDC: Z4( MEC: 61 MDI: 62( MGR: 29 DHS: 7.0</div> <div>D&amp;I GR</div> <div>20.1 19.4</div> <div></div>	<div>24.3</div>
<div>6-1/2 in. N S/N: L7</div> <div></div>	<div>16.0</div>	<div>6-1/2 in. N S/N: L7</div> <div></div>	<div>16.0</div>	<div>6-1/2 in. N S/N: L7</div> <div></div>	<div>16.0</div>
<div>8-3/8 in. NM Rc S/N: GU7</div> <div></div>	<div>14.4</div>	<div>8-3/8 in. NM Rc S/N: GU7</div> <div></div>	<div>14.5</div>	<div>8-3/8 in. NM Rc S/N: GU7</div> <div></div>	<div>14.5</div>
<div>6-1/2 in. N S/N: ANA5</div> <div></div>	<div>12.3</div>	<div>6-1/2 in. N S/N: ANA5</div> <div></div>	<div>12.4</div>	<div>6-1/2 in. N S/N: ANA5</div> <div></div>	<div>12.4</div>
<div>6-11/16 in. F S/N: CMF</div> <div></div>	<div>9.6</div>	<div>6-11/16 in. F S/N: CMF</div> <div></div>	<div>9.6</div>	<div>6-11/16 in. F S/N: CMF</div> <div></div>	<div>9.6</div>
<div>7 in. PowerPa A700G1 S/N: 7( 1.5 deg. Bent 8-3/8 in. Mot</div> <div></div>	<div>9.1</div>	<div>7 in. PowerPa A700G1 S/N: 7( 1.15 deg. Bent 8-3/8 in. Mot</div> <div></div>	<div>9.1</div>	<div>7 in. PowerPa A700G1 S/N: 7( 1.15 deg. Bent 8-3/8 in. Mot</div> <div></div>	<div>9.1</div>



6-3/4 in. Pov  
MDC: Z40  
MEC: 61  
MDI: 620  
MGR: 29  
DHS: 7.0

D&I  
GR  
— 20.1  
— 19.4



8-3/8 in. Roller  
S/N: GU1



6-1/2 in. N  
S/N: L1



6-1/2 in. N  
S/N: ANA5



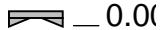
42.8 deg.  
44.4 deg.



30.0 deg.  
A700G1  
S/N: 70  
1.15 deg. Bent  
8-3/8 in. Motor



Smith Ins  
OD: 8-1  
GFI11 S/N: I



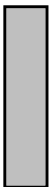
Maximum string dia  
All lengths in

24.36-3/4 in. Pov  
MDC: Z40  
MEC: 61  
MDI: 620  
MGR: 29  
DHS: 7.0

D&I  
GR  
— 18.9  
— 18.3



6-1/2 in. N  
S/N: ANA5



8-3/8 in. Roller  
S/N: GU2



6-1/2 in. N  
S/N: L1



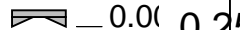
6-11/16 in. F  
S/N: CMF



6-3/4 in. Power  
AC675X  
S/N: 30  
0 deg. Bent  
8-3/8 in. Motor



Smith Ins  
OD: 8-1  
GFI11 S/N: I



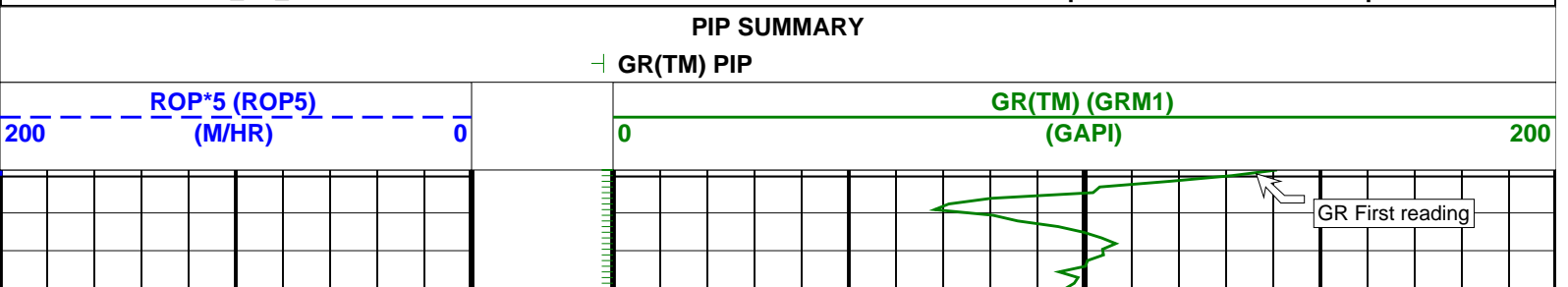
Maximum string dia  
All lengths in

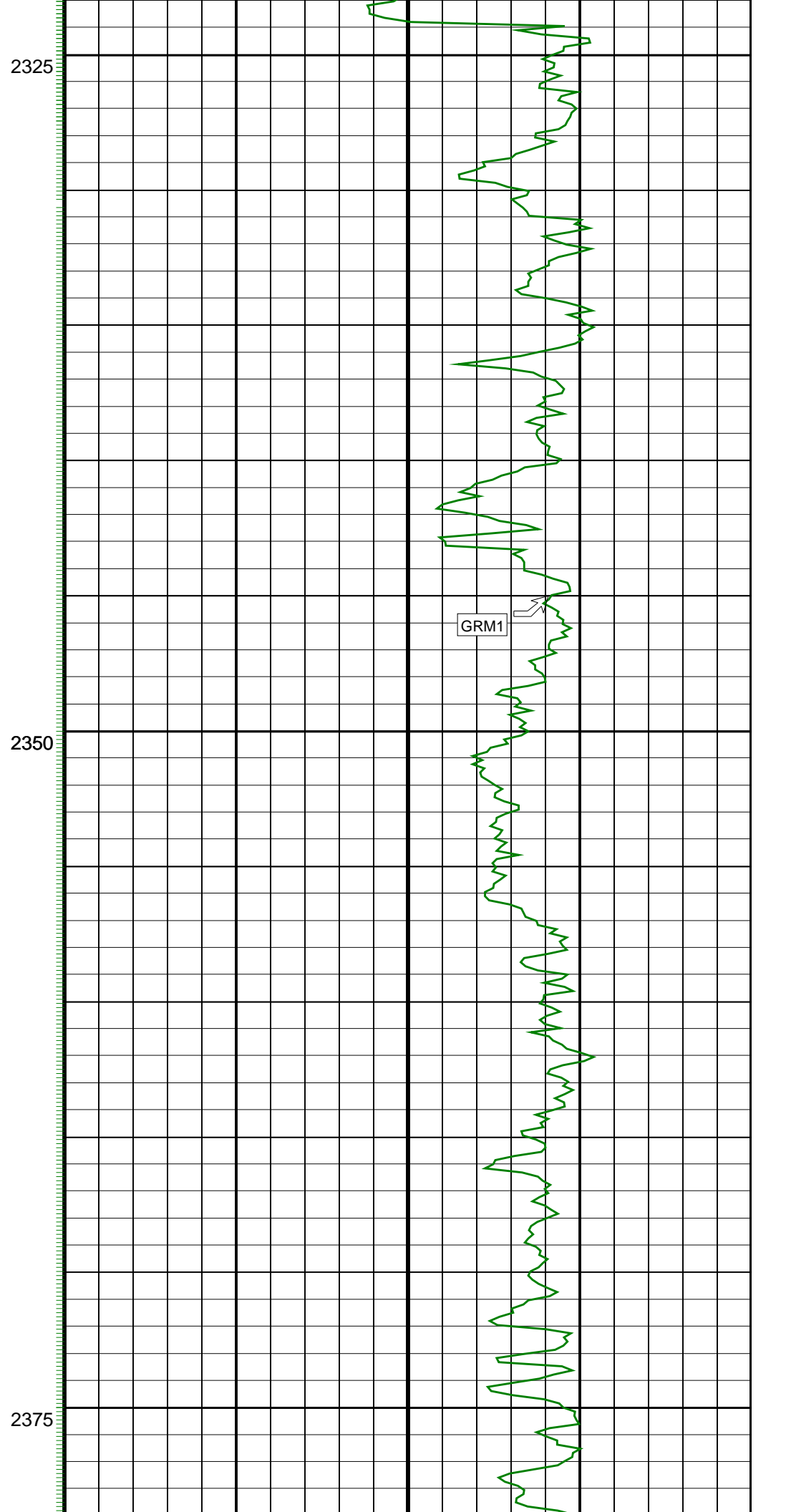
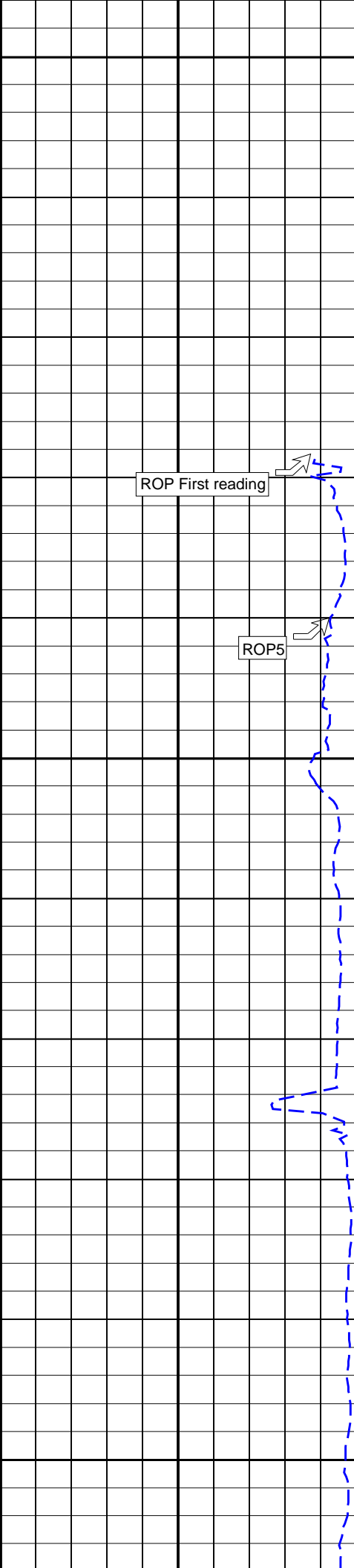
# Bit Run Summary

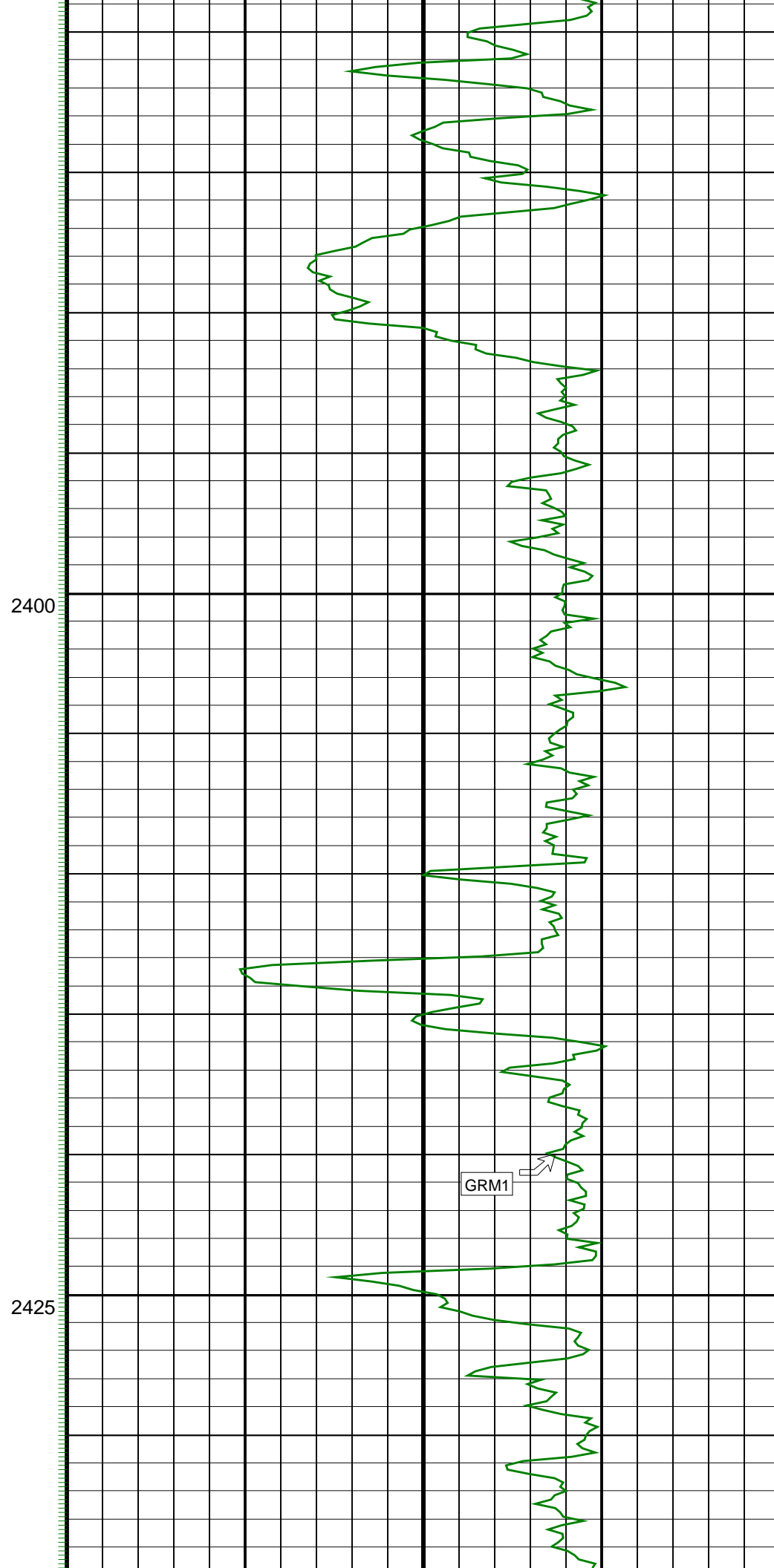
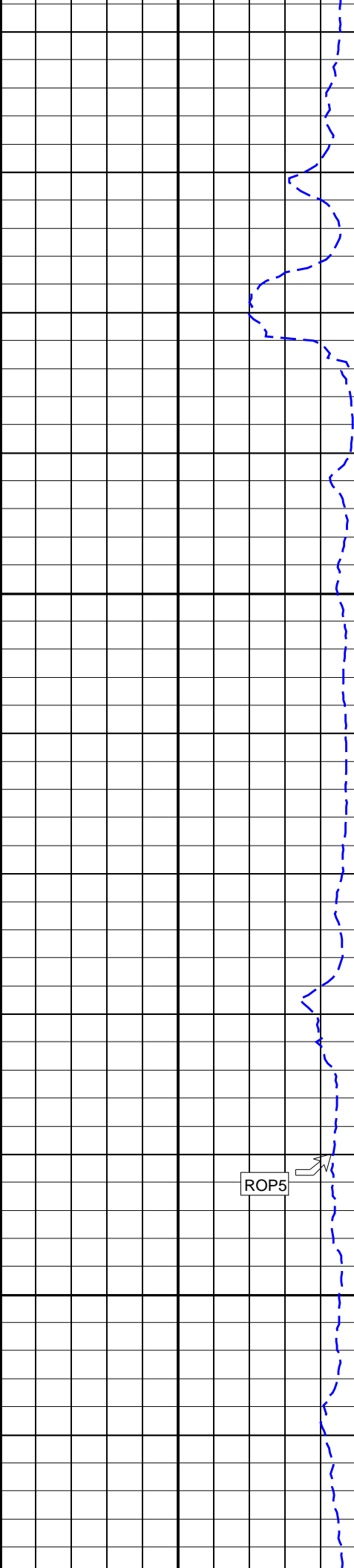
Run number		1	2	3	4	5				
Bit size	in.	8.5	8.5	8.5	8.5	8.5				
Bit start depth	m	2331.7	2362.0	2662.0	3040.0	3393.0				
Bit end depth	m	2362.0	2662.0	3040.0	3393.0	3491.0				
Top interval logged	m	2319.0	2342.5	2642.4	3020.5	3373.5				
Bottom interval logged	m	2342.5	2642.4	3020.5	3373.5	3472.7				
Begin log: time		04:25	23:52	06:25	06:15	12:52				
Begin log: date		42.2 deg.	42.8 deg.	42.8 deg.	30.0 deg.	13-Sep-04				
End log: time		09:22	13:40	08:20	00:13	02:10				
End log: date		04-Sep-04	06-Sep-04	09-Sep-04	12-Sep-04	14-Sep-04				
Mud data										
Depth	m	2361.0	2661.0	3040.0	3365.0	3470.0				
Type		45.1 deg.	45.1 deg.	KCl/PHPA/Glycol	KCl/PHPA/Glycol	KCl/PHPA/Glycol				
Mud weight	ppg	10.2	10.1	10.0	9.9	9.95				
Solids	%	8.7	9.4	8.8	7.4	8.3				
Chlorides	mg/L	48,000	48,000	42,000	45,000	43,000				
Rm										
Rmf										
Rmc										
Potassium	%	6.9	8	7.2	7.4	7.4				
Environmental data										
GR										
Mud weight	ppg	10.2	10.1	10.0	9.9	9.95				
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	9.04	9.04	9.04	9.04	9.04				
Recording rate 2	SEC									
Filtering GR		3 pt.	3 pt.	3 pt.	3 pt.	3 pt.				
Filtering density										
Filtering Neutron										
Company representative		R. Morris	44.4 deg.							
Anadrill personnel		J. Dolan	R. Borjas	C. Soper	T. Auger	L. Johnston				

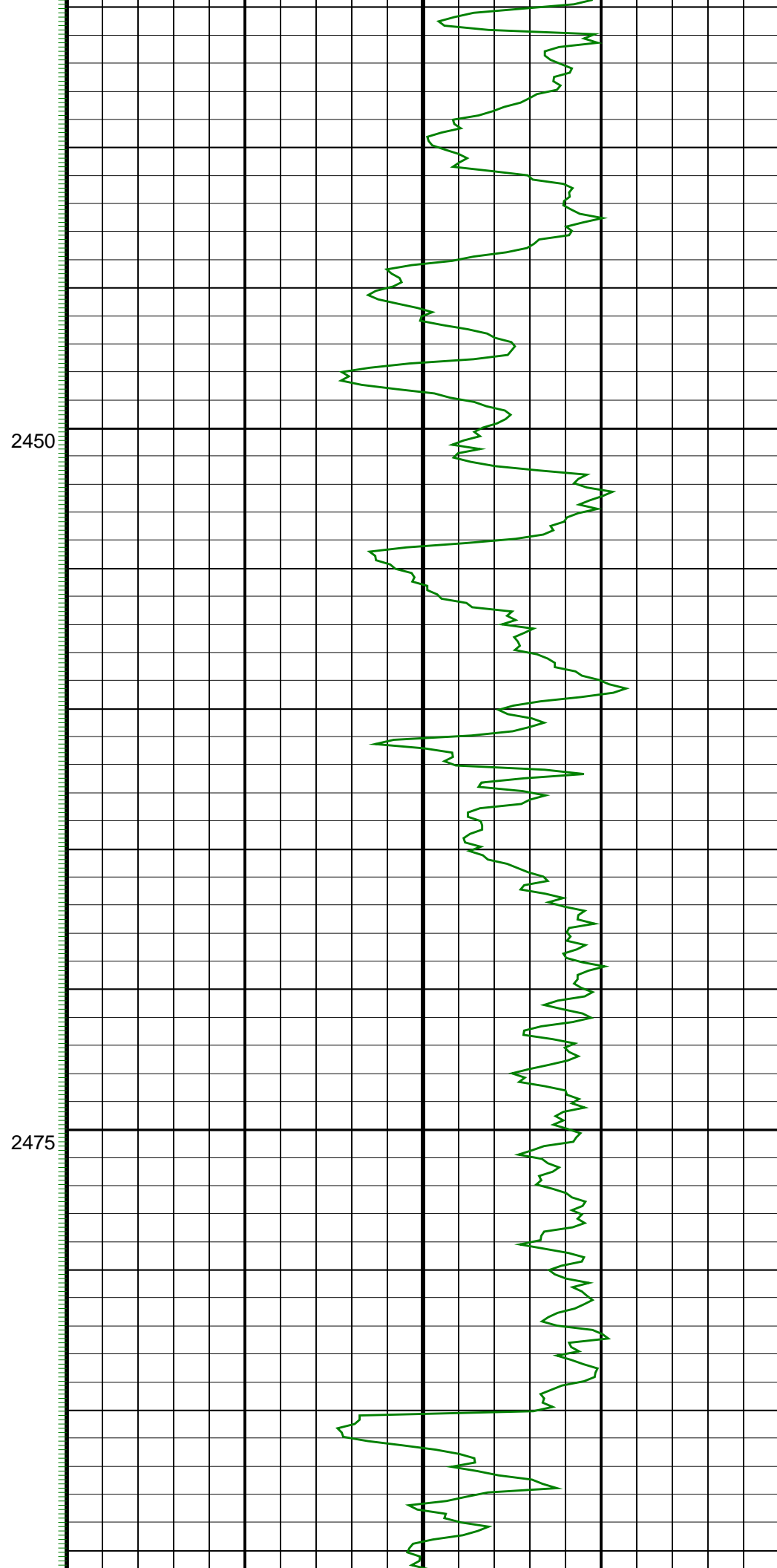
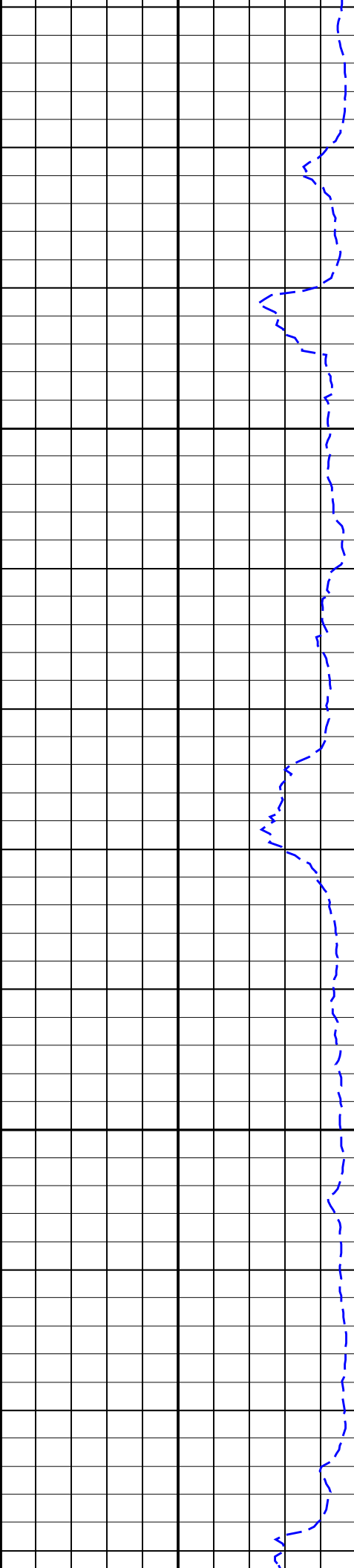
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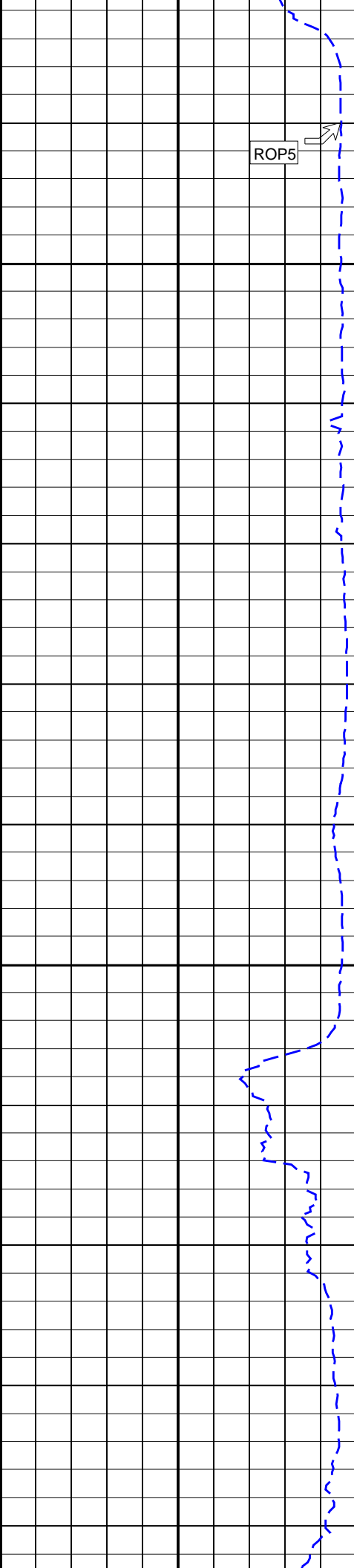






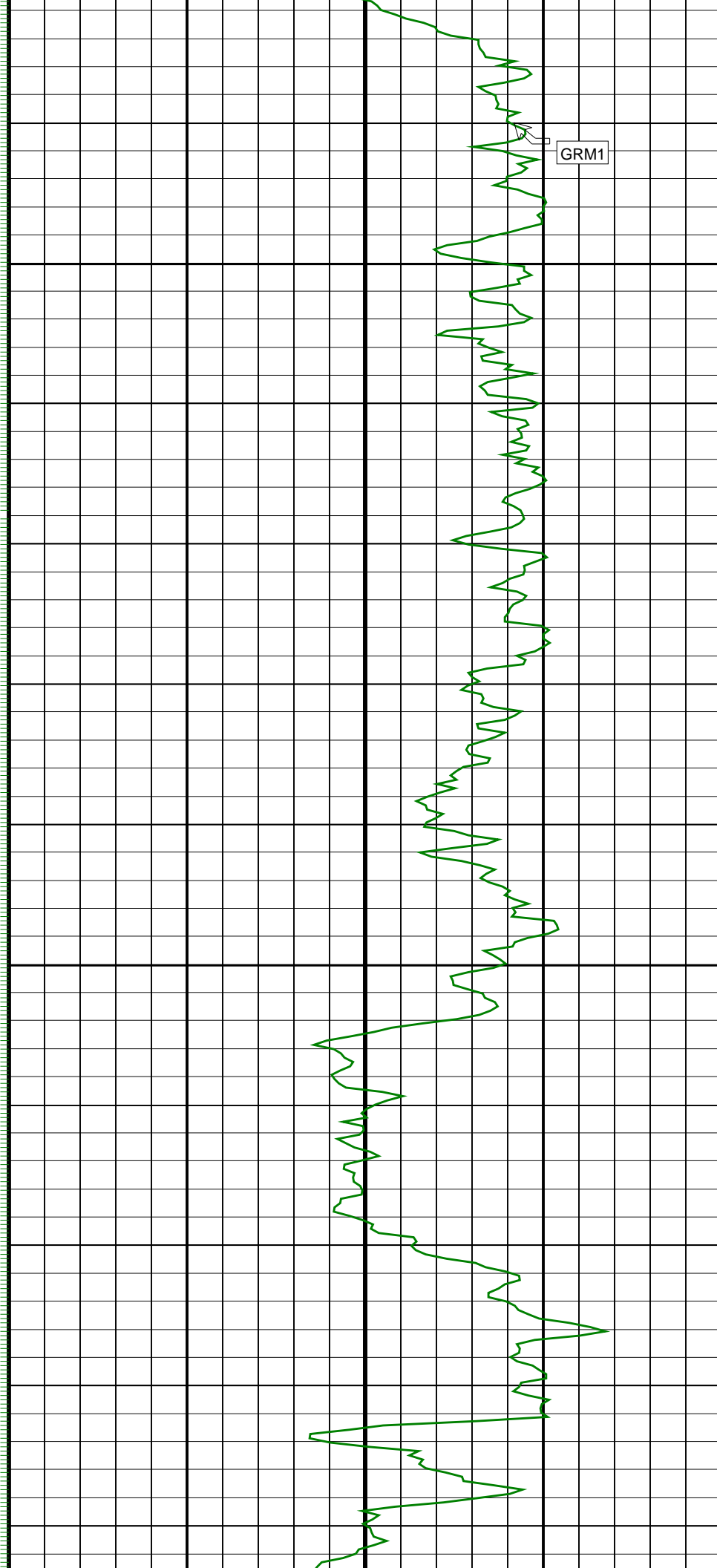


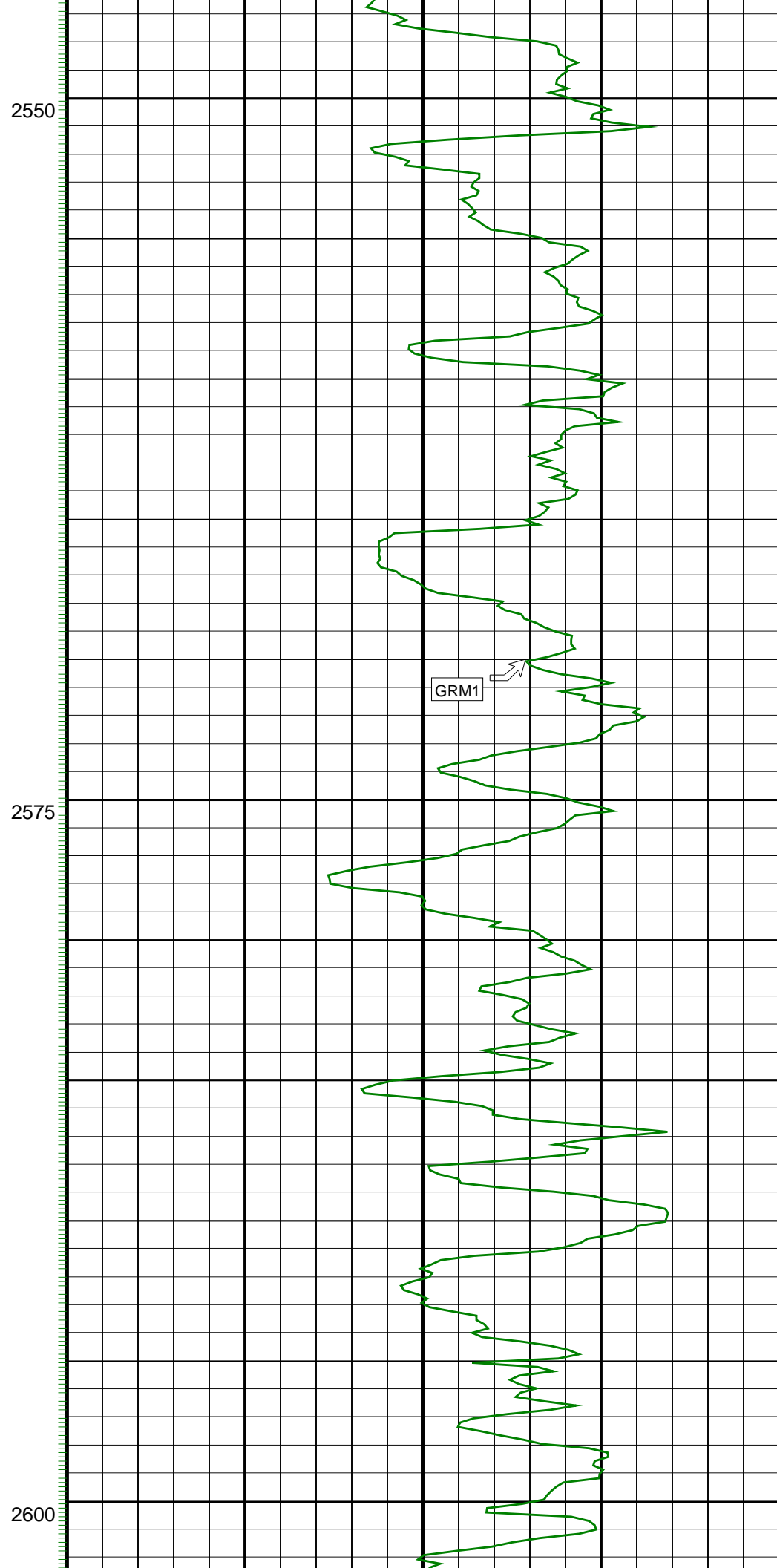
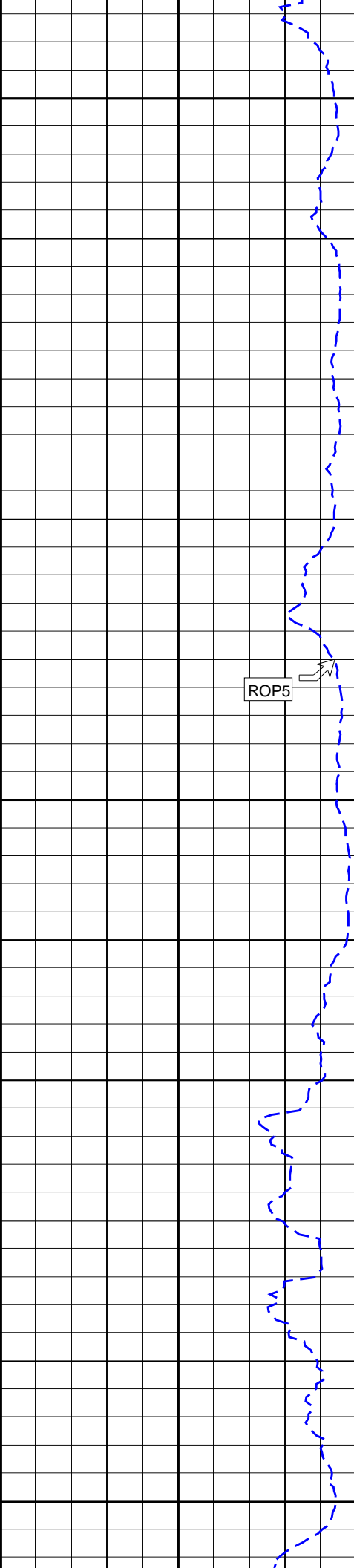


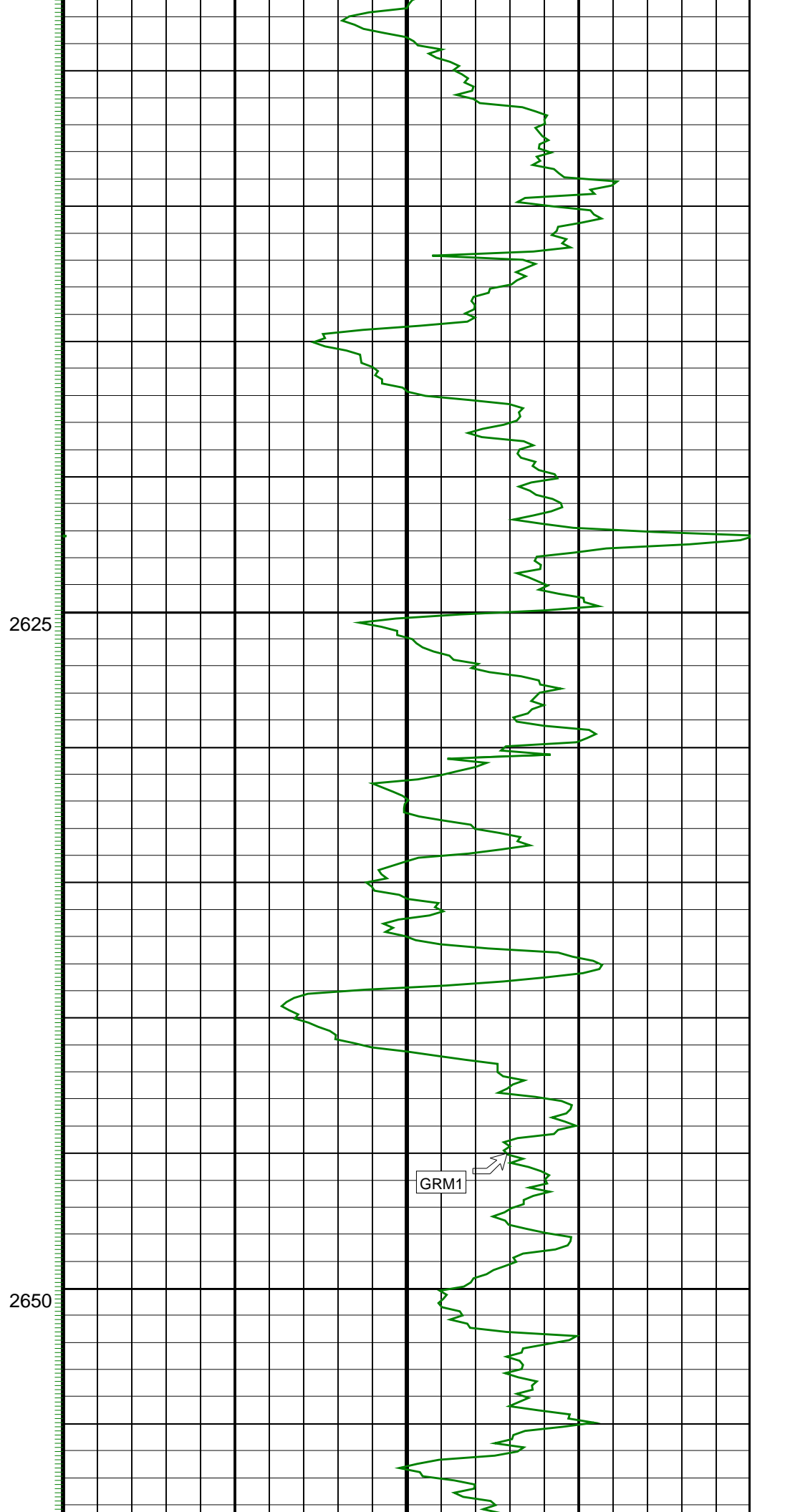
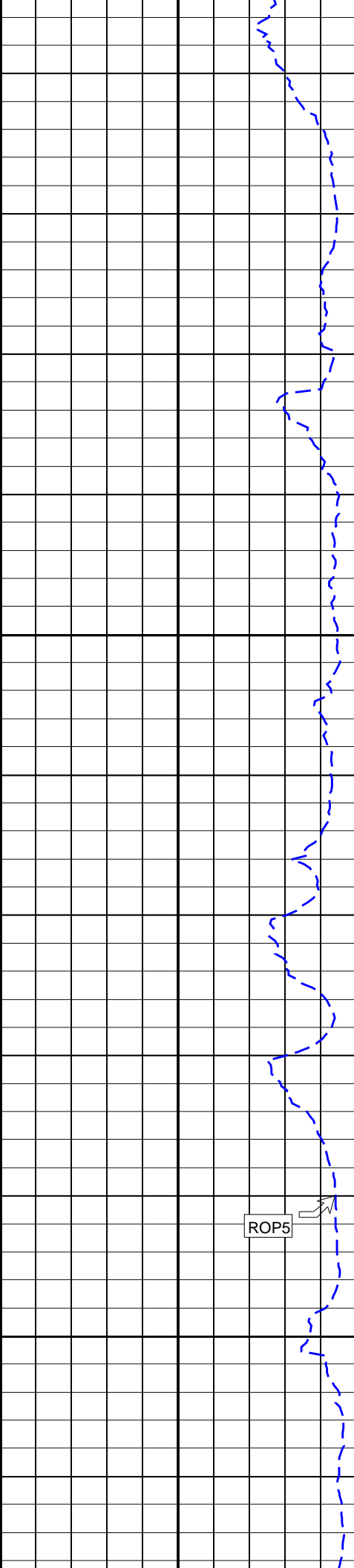


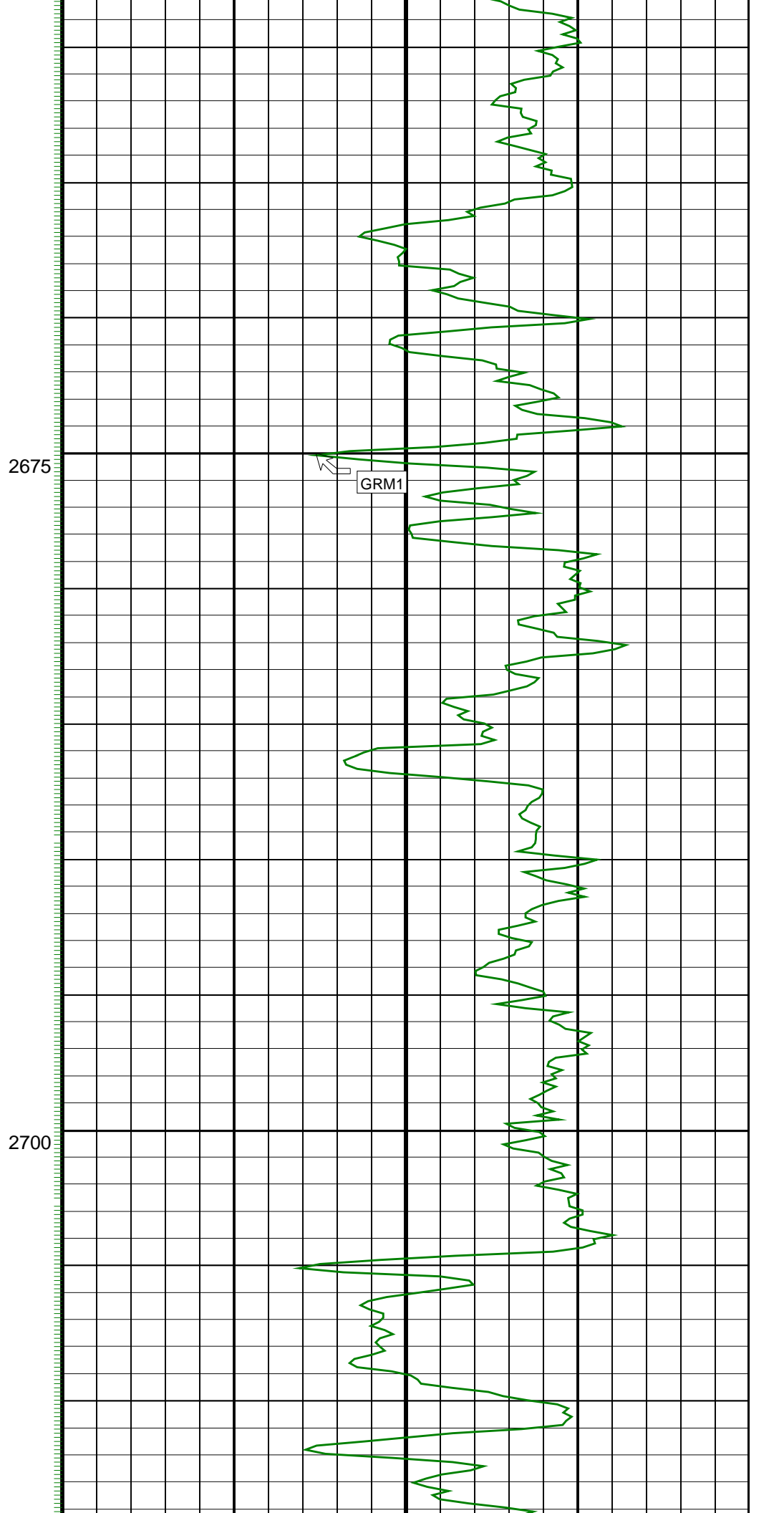
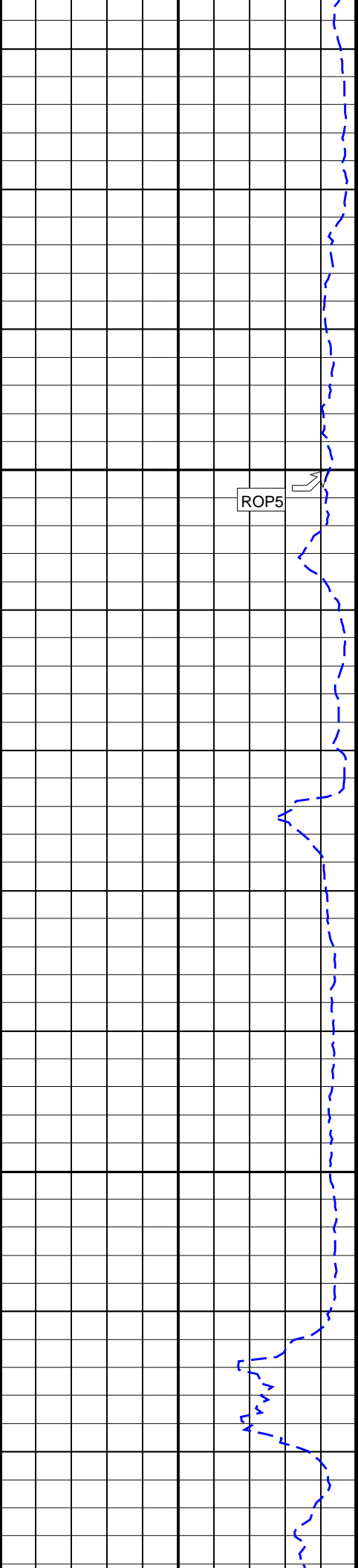
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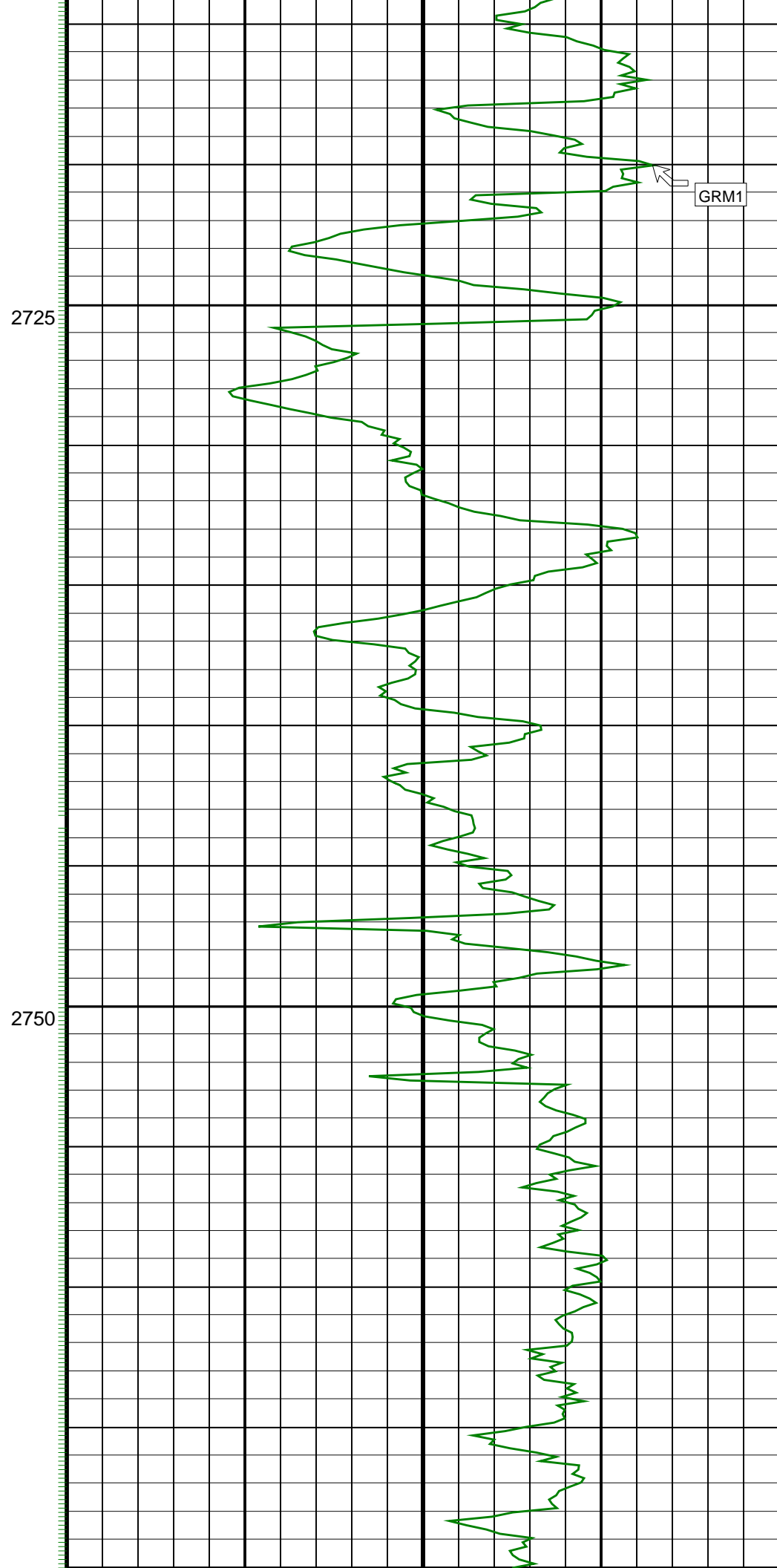
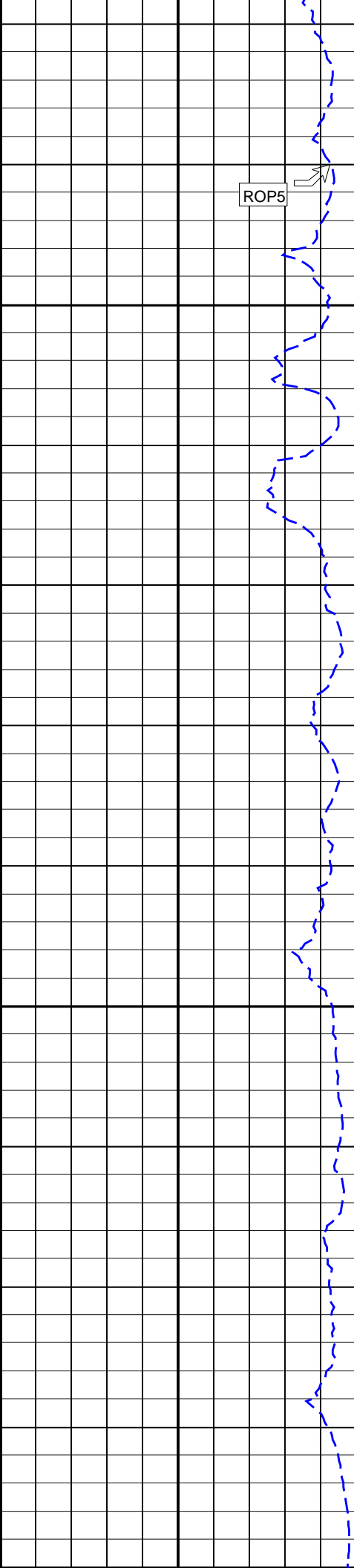
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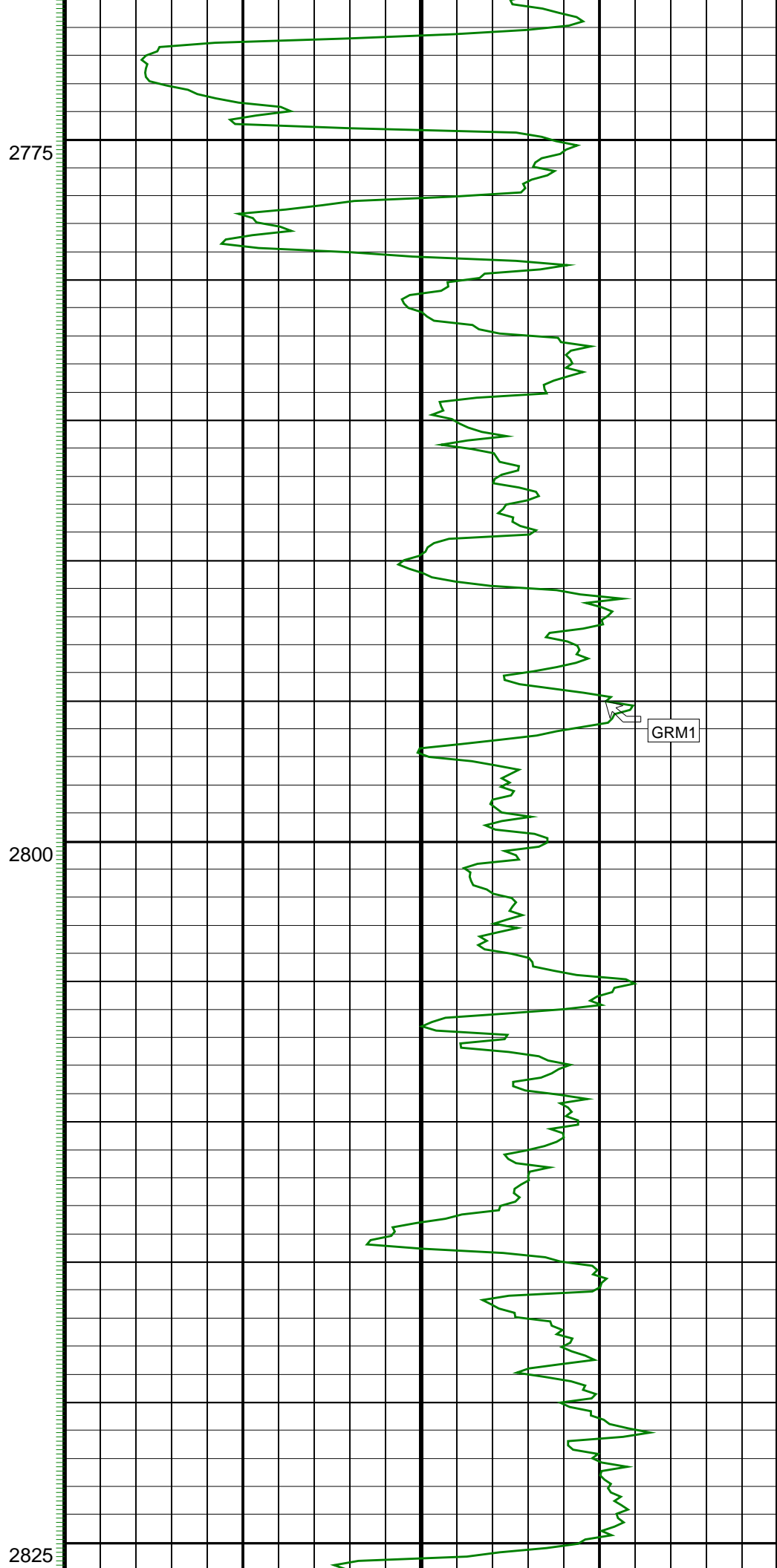
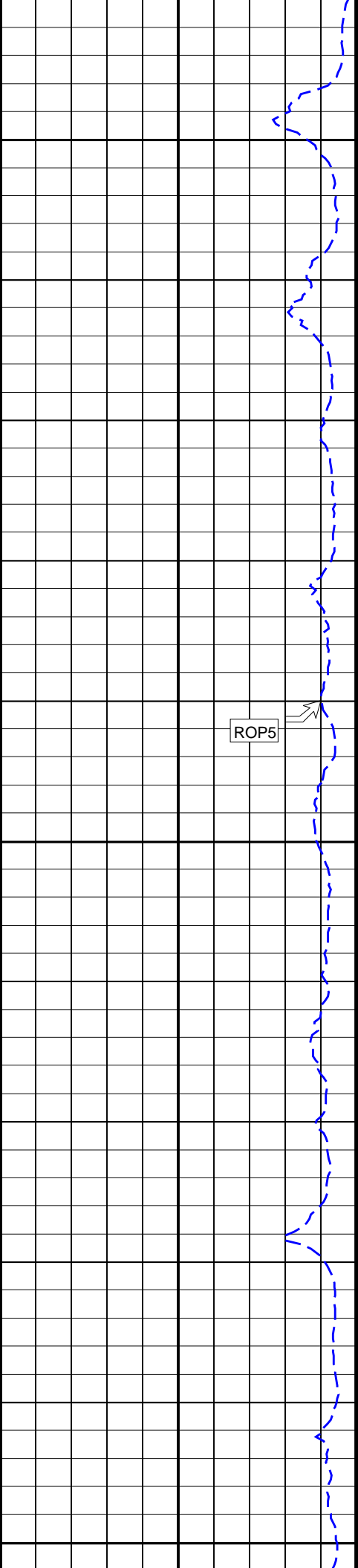


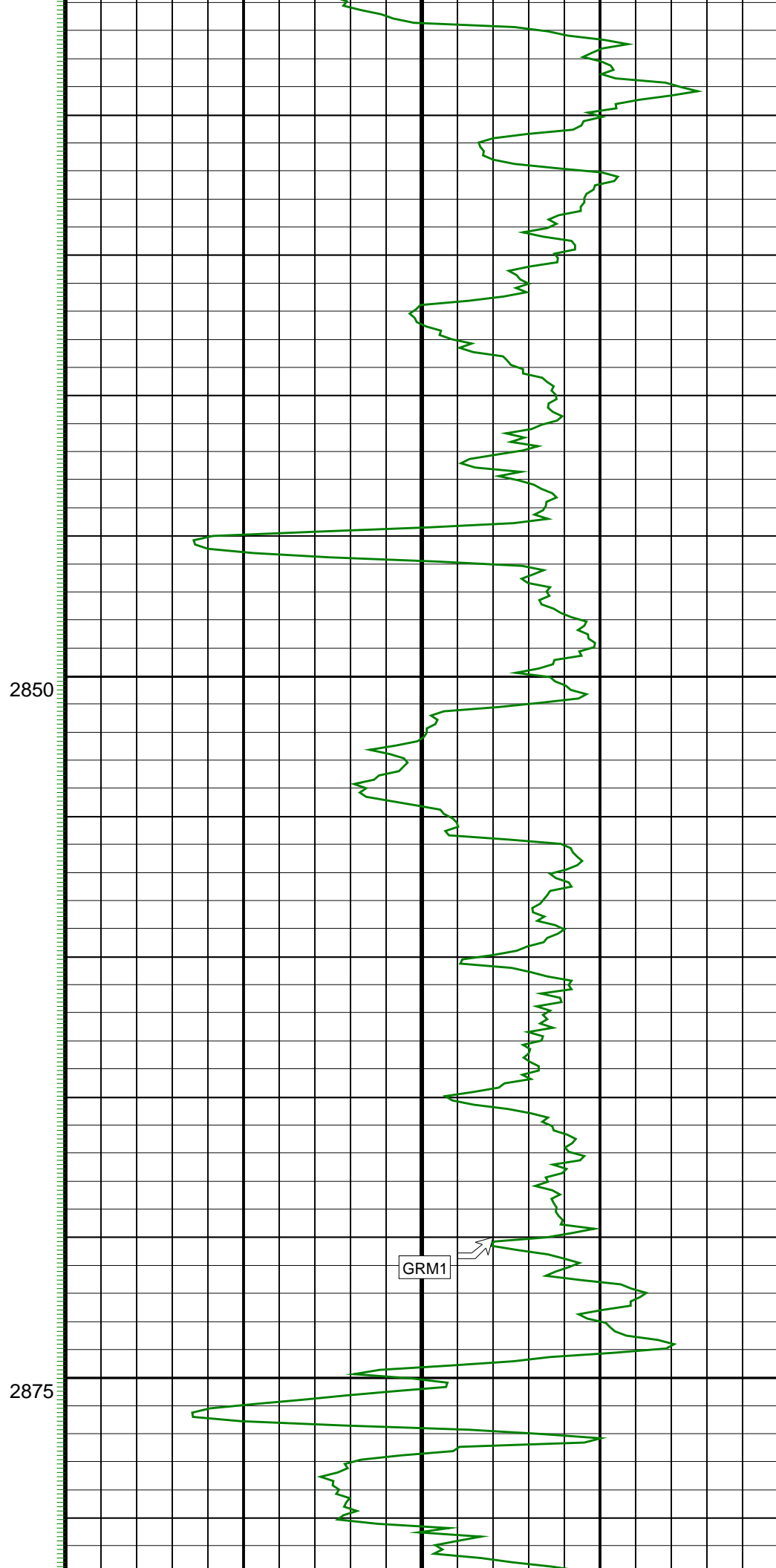
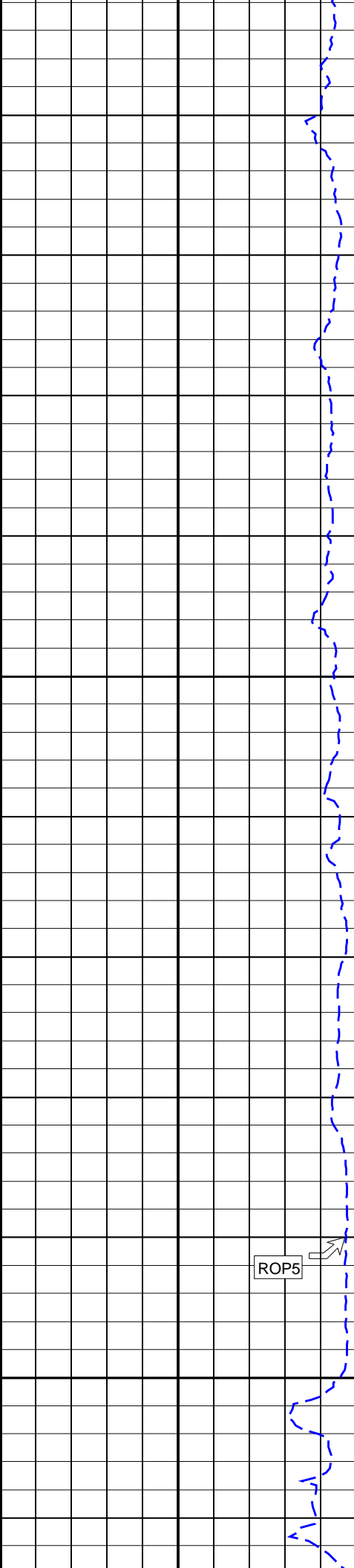


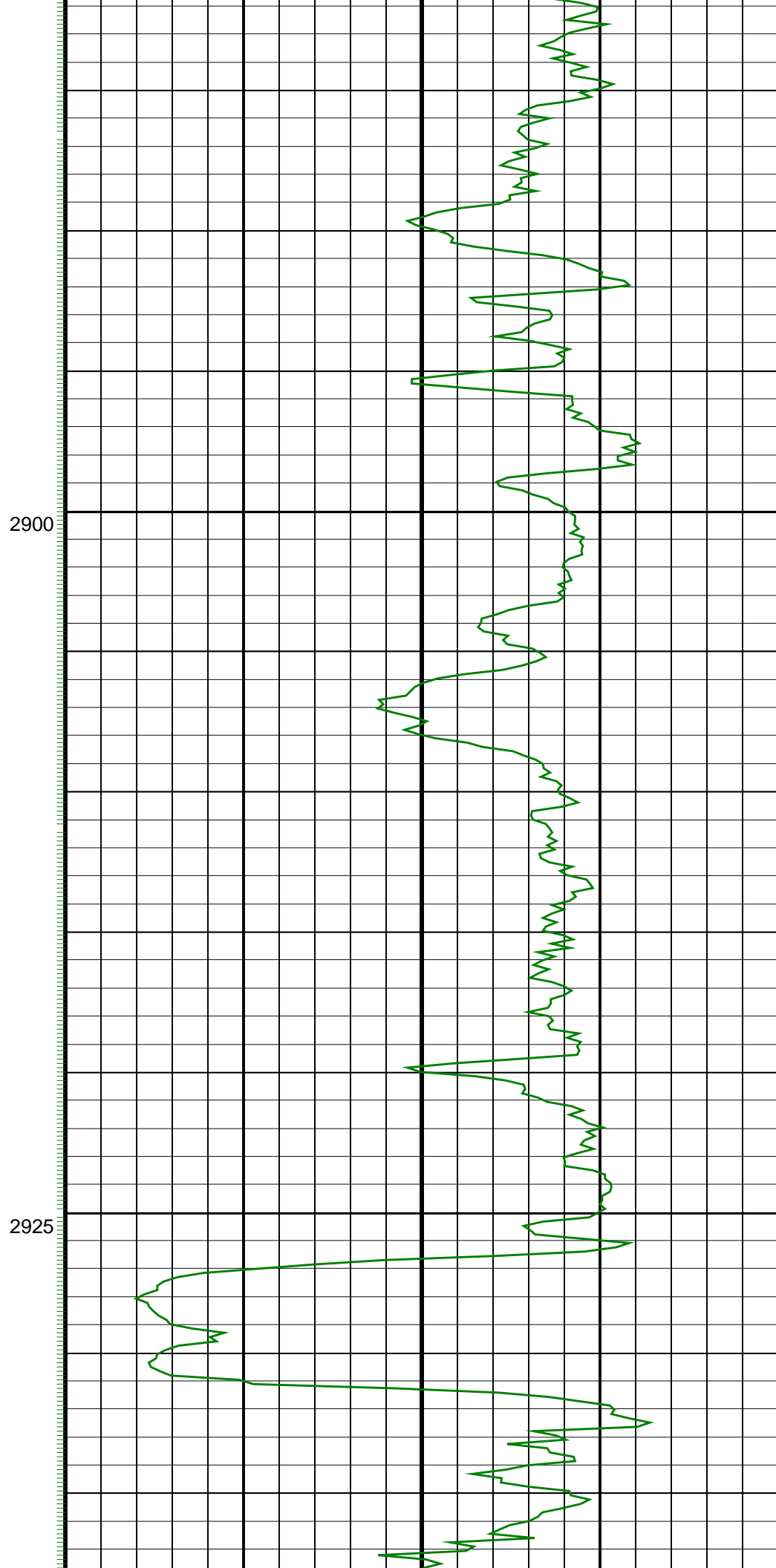
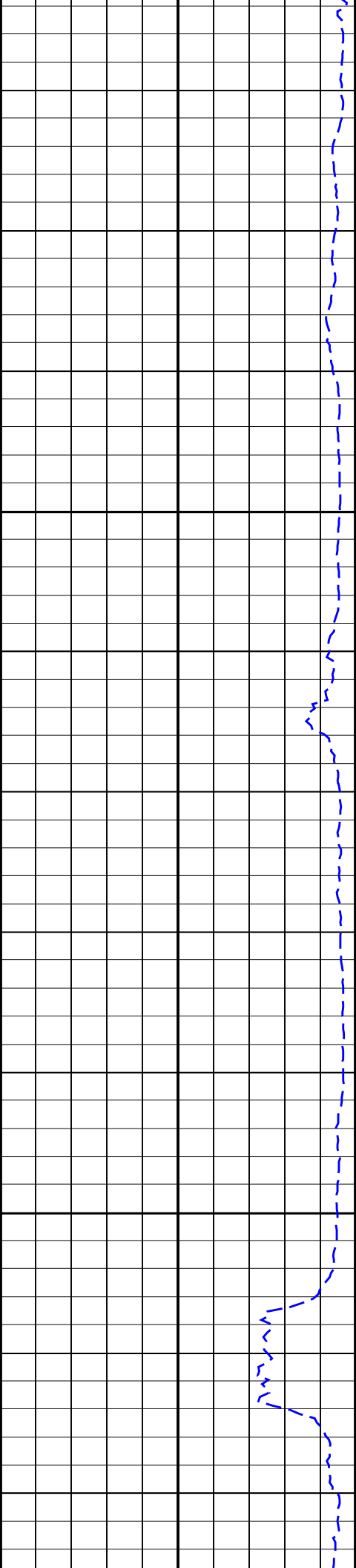




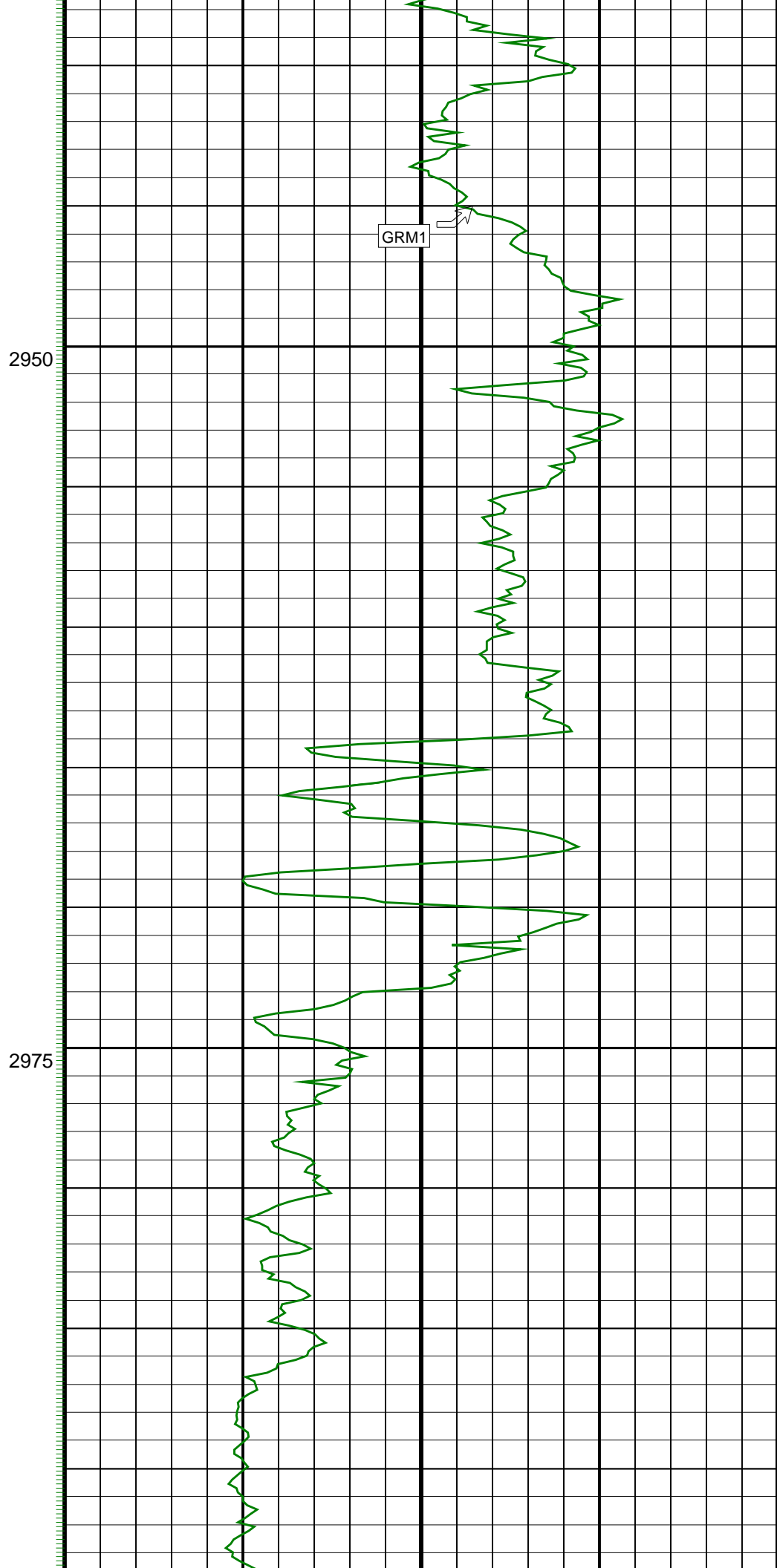
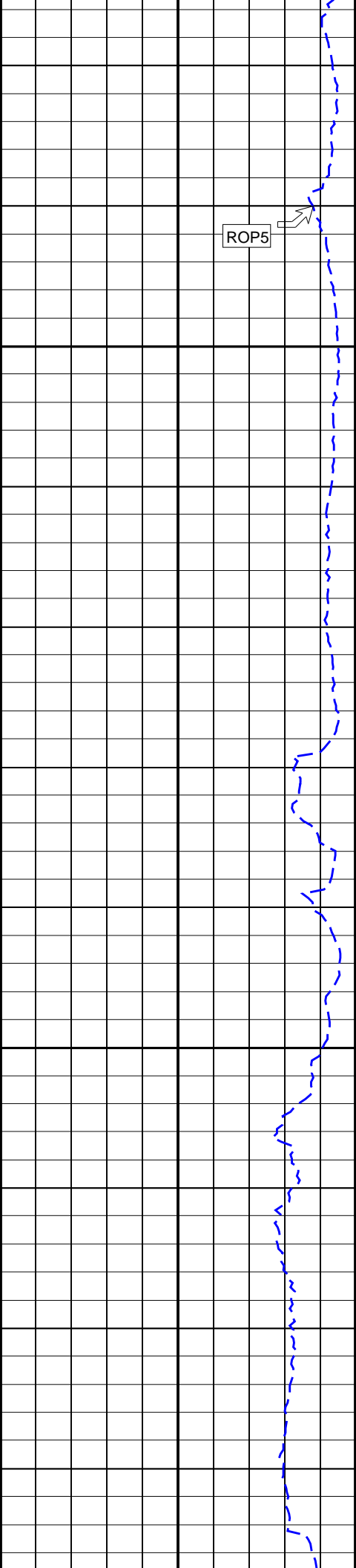


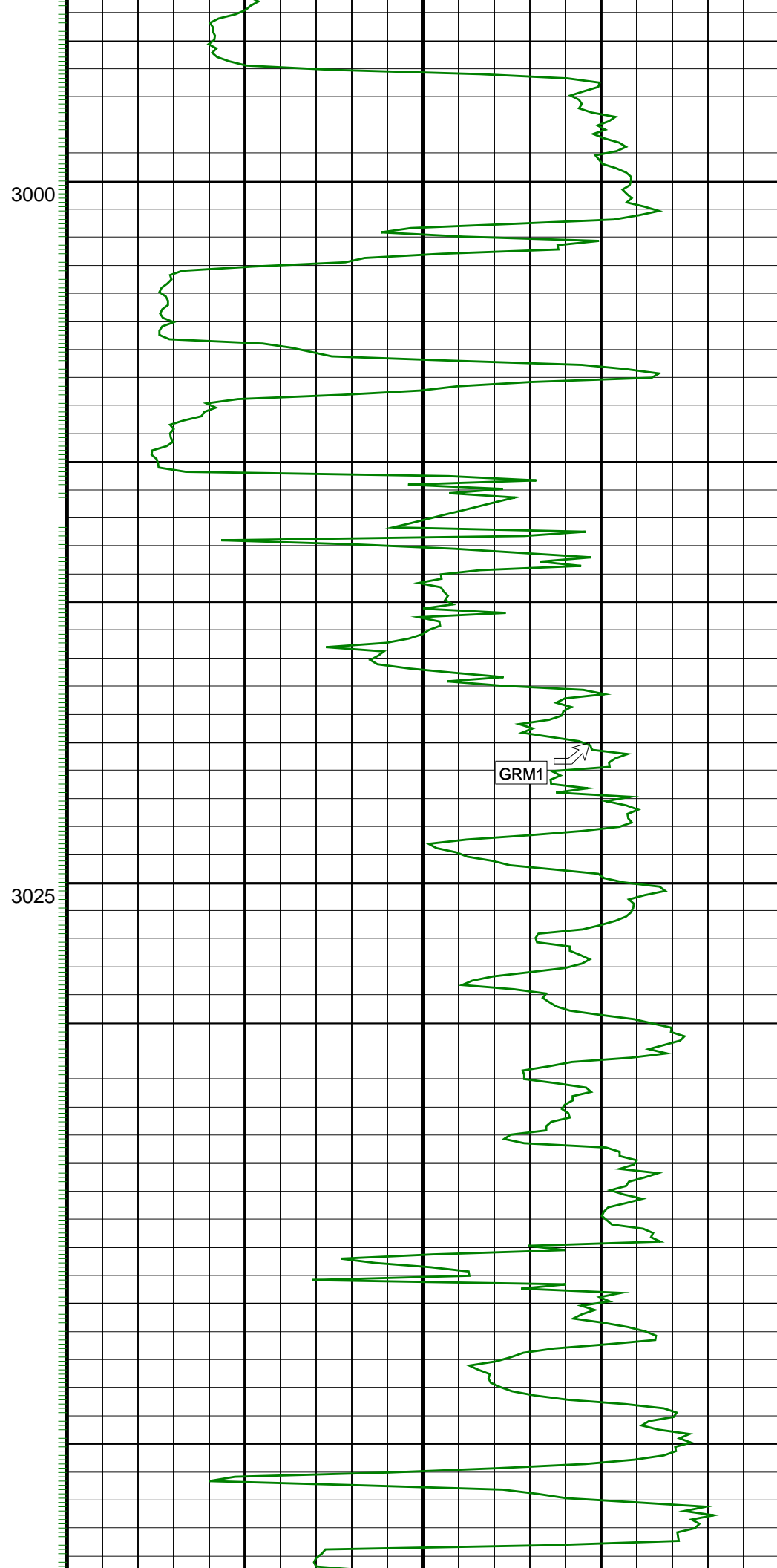
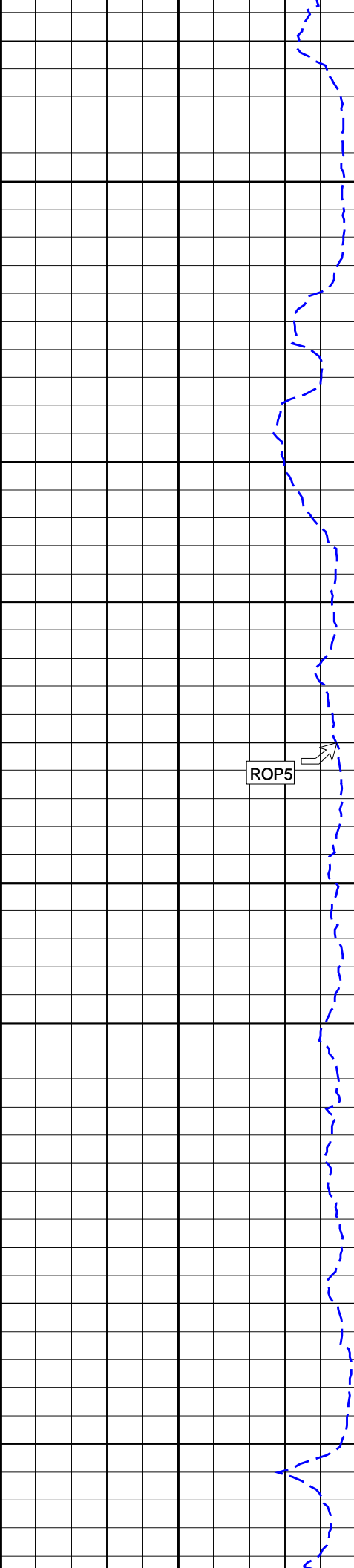




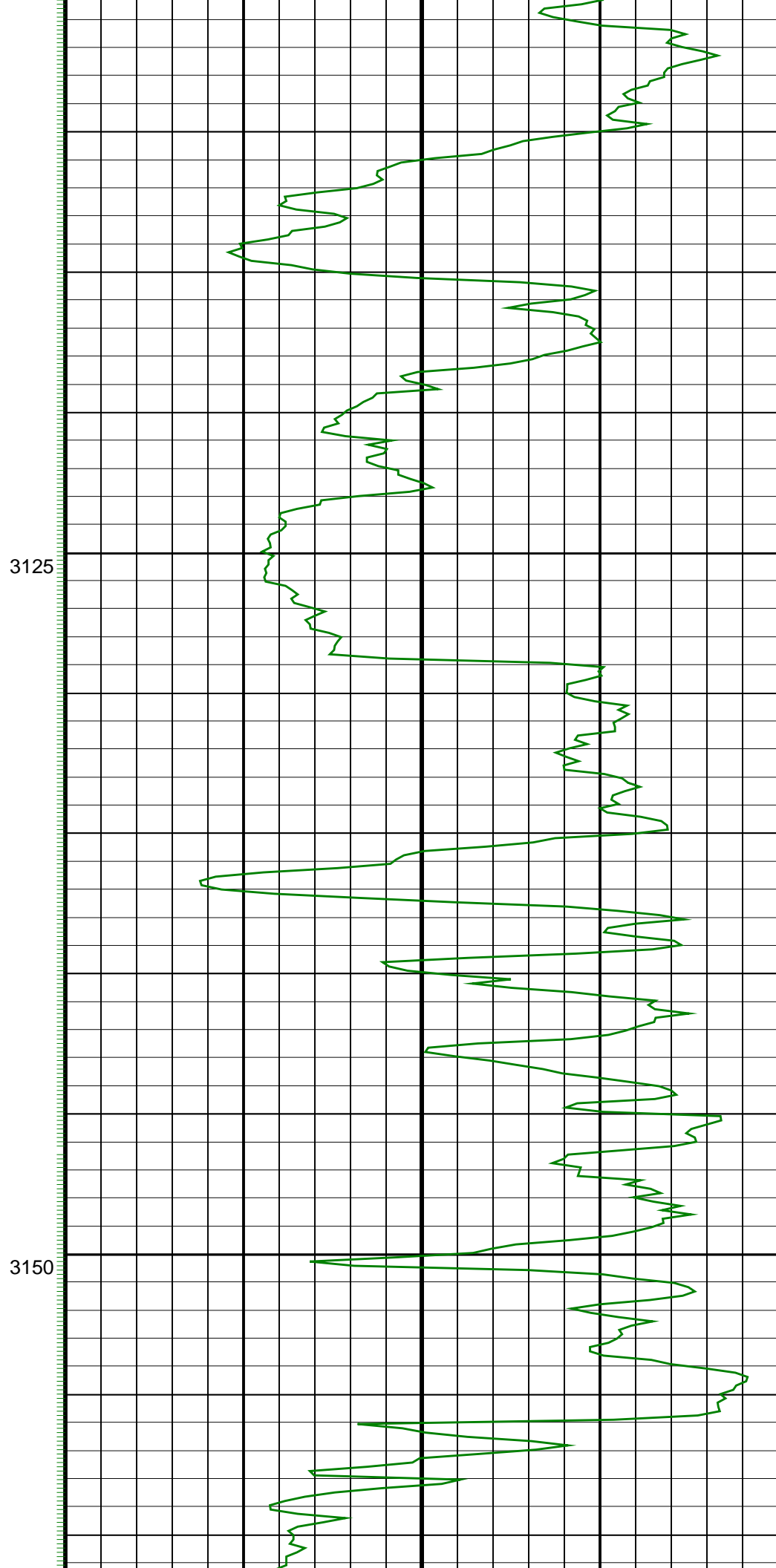
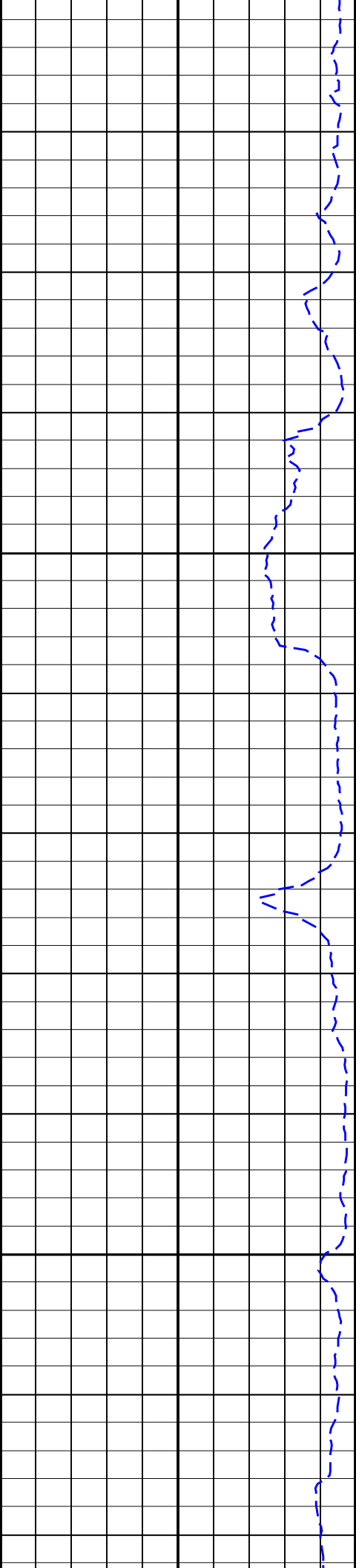




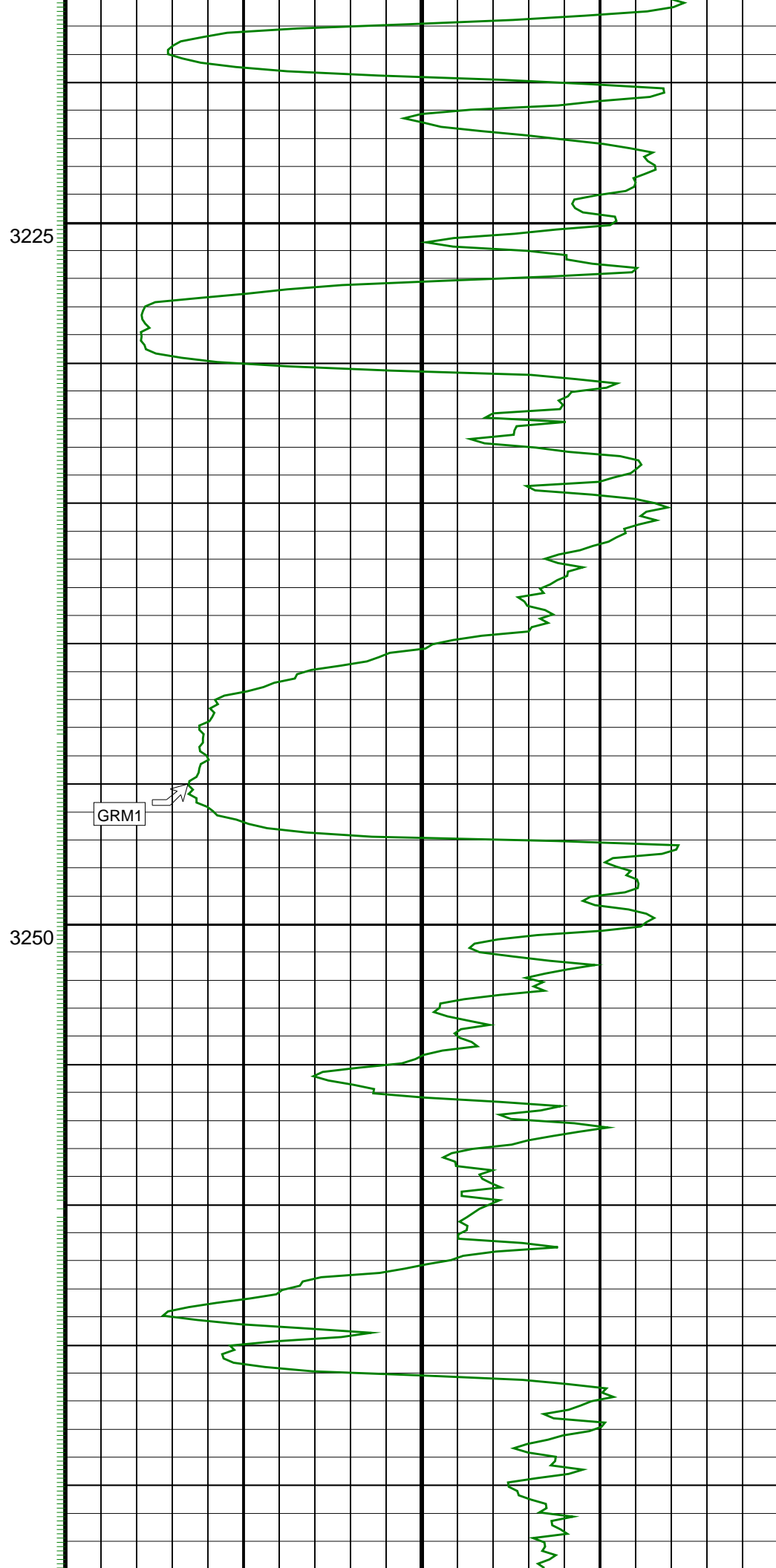
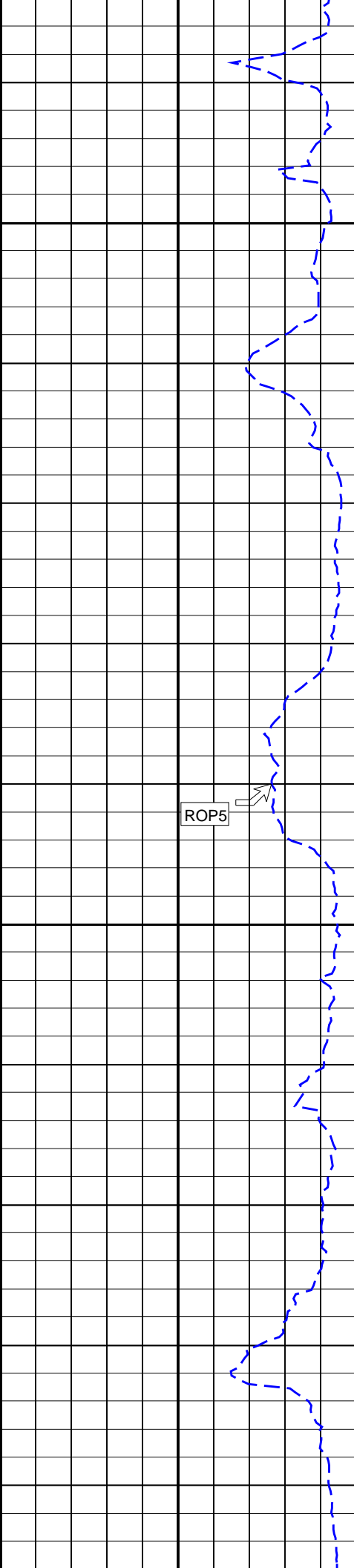


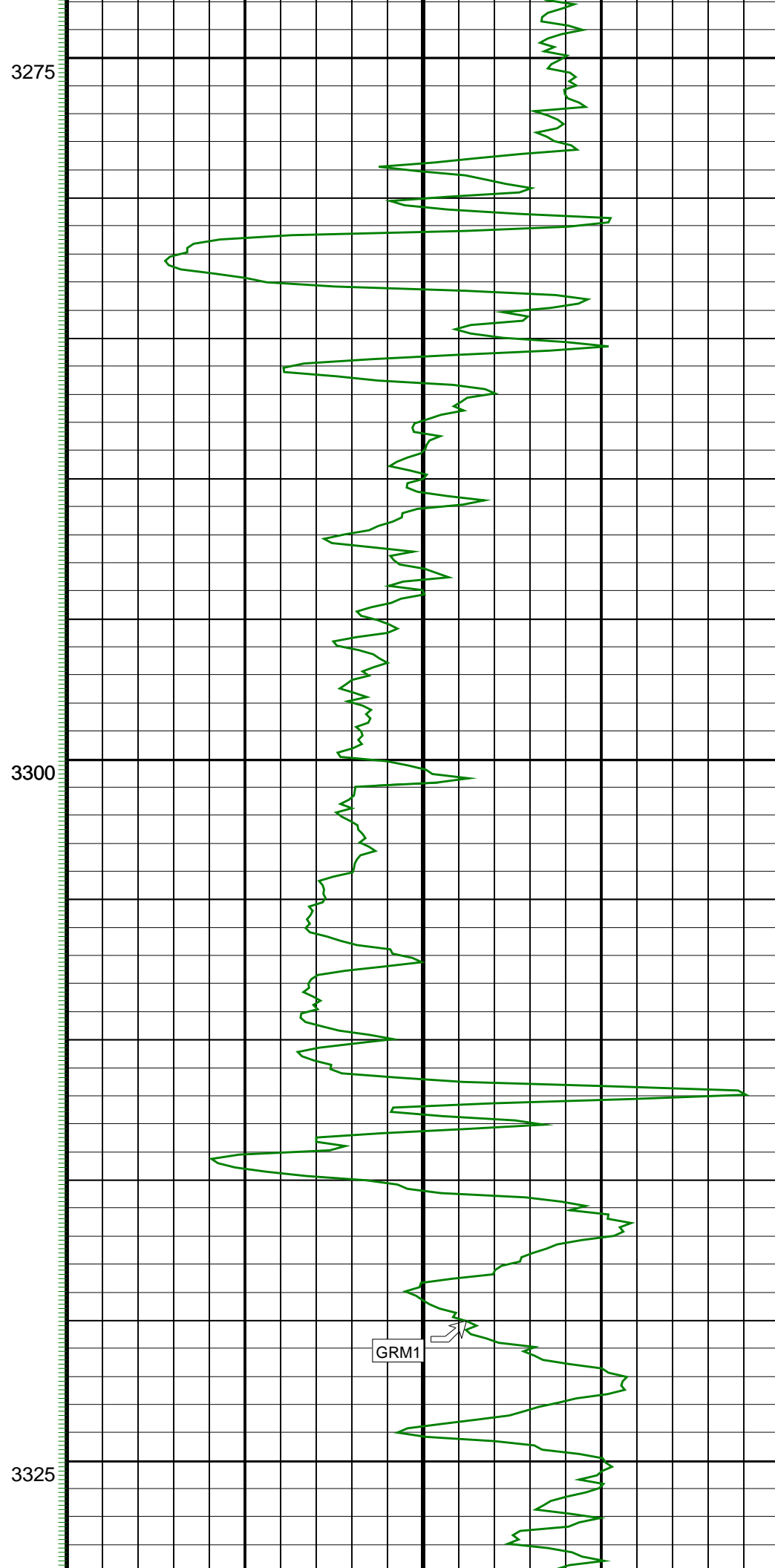
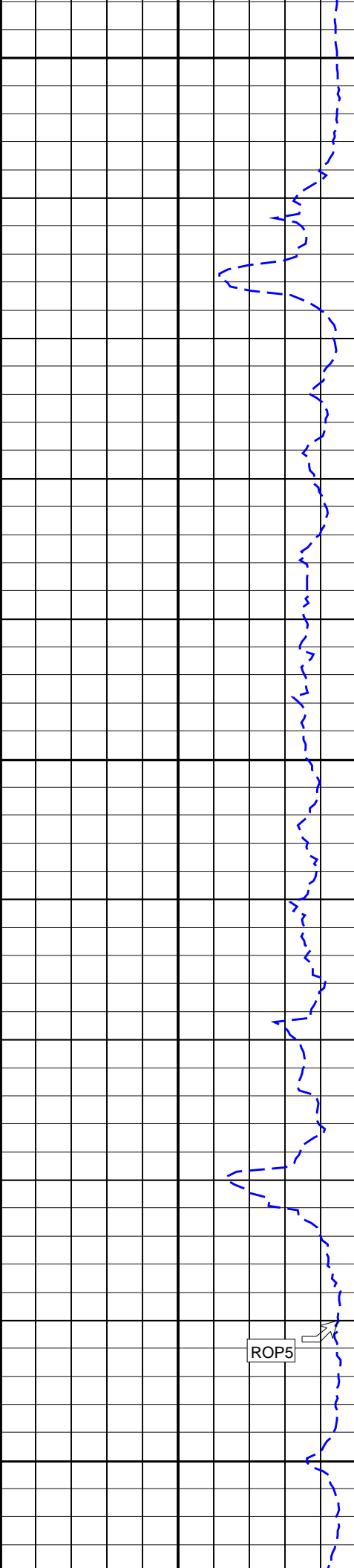


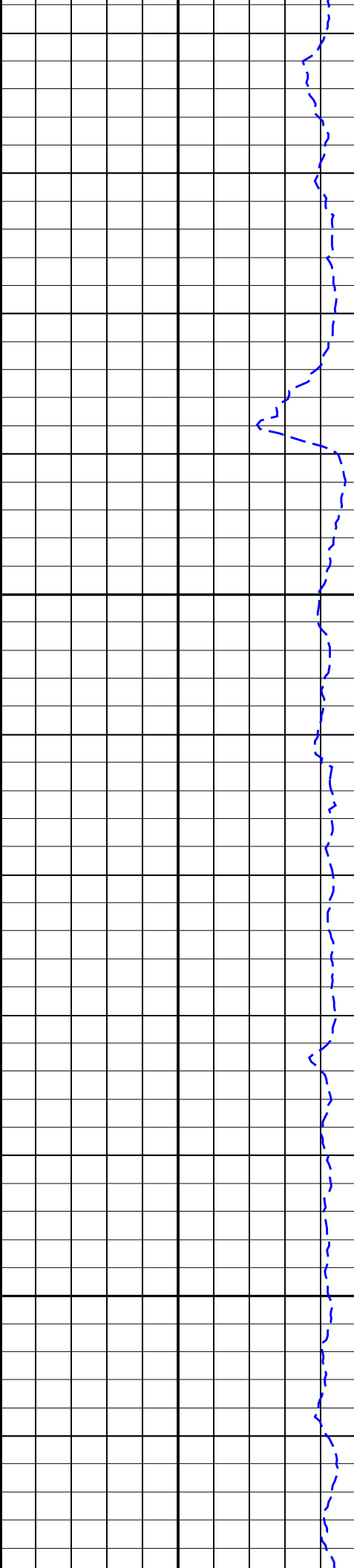








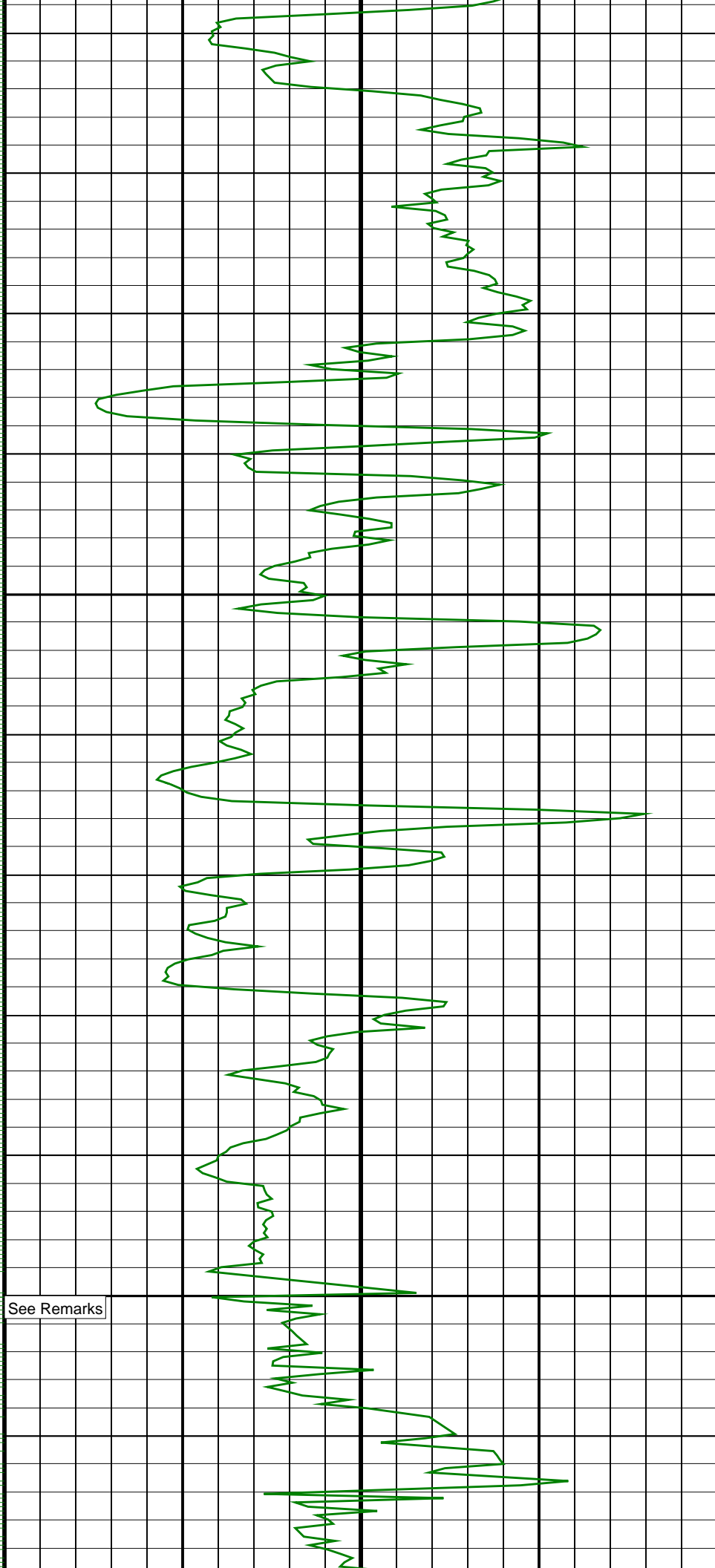




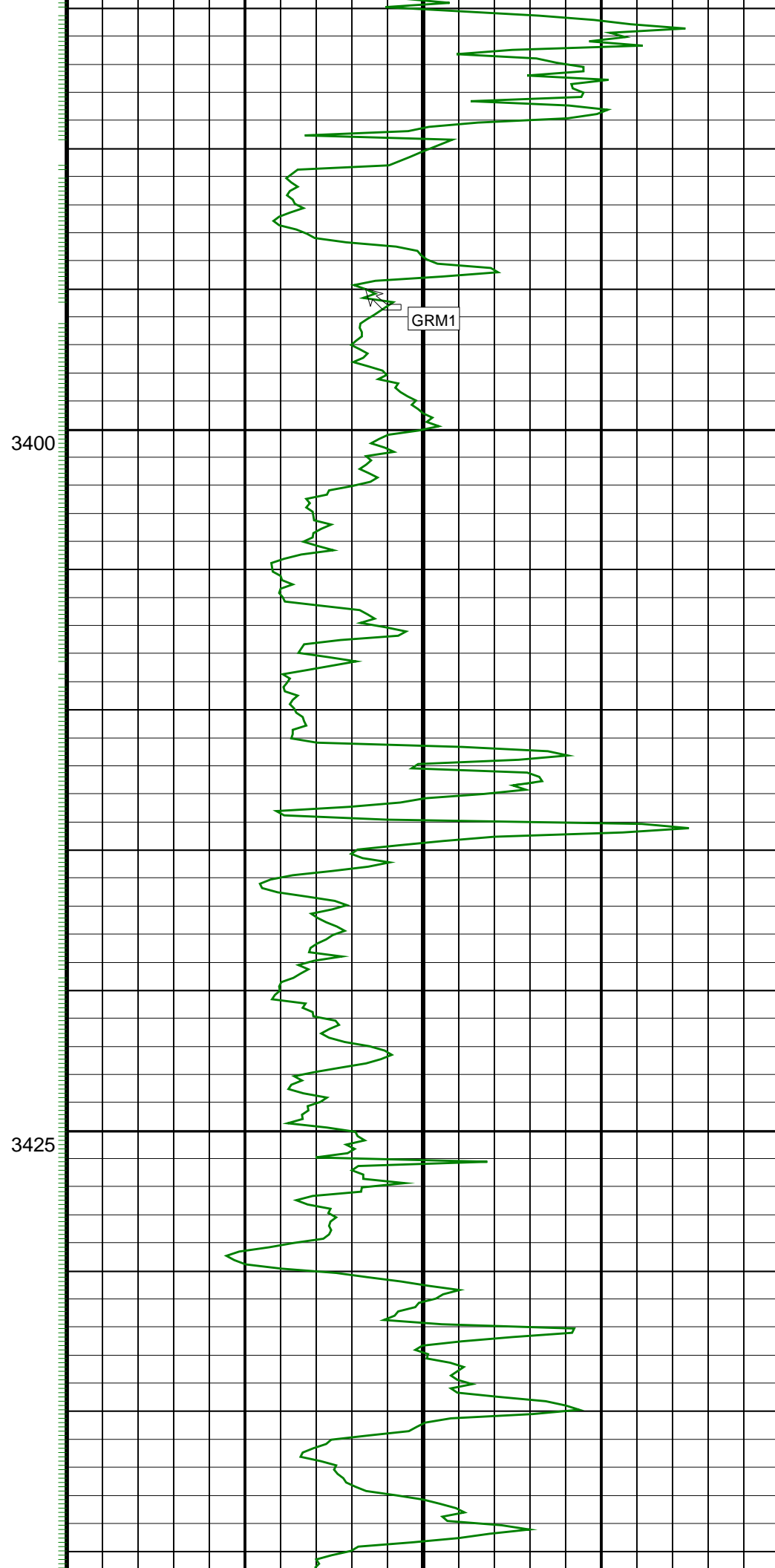
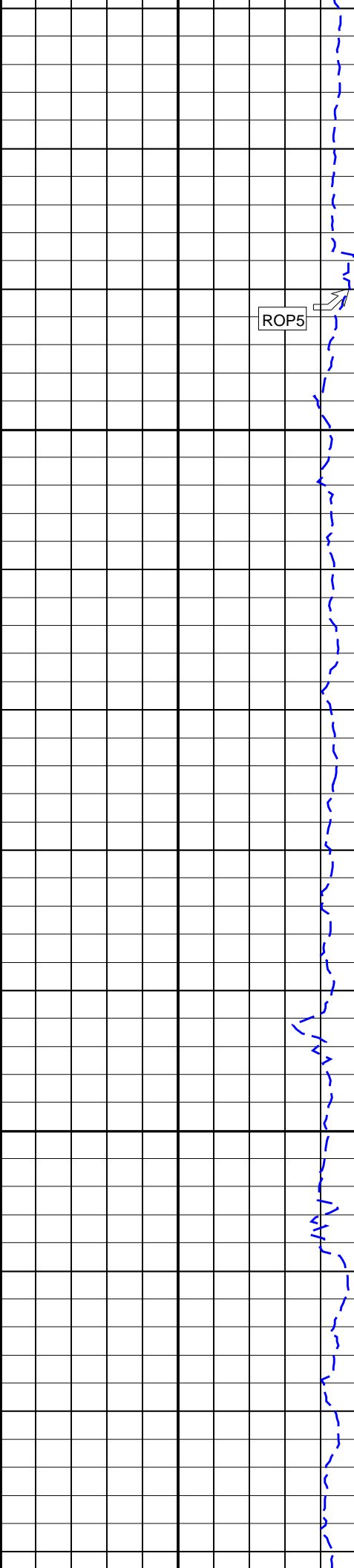
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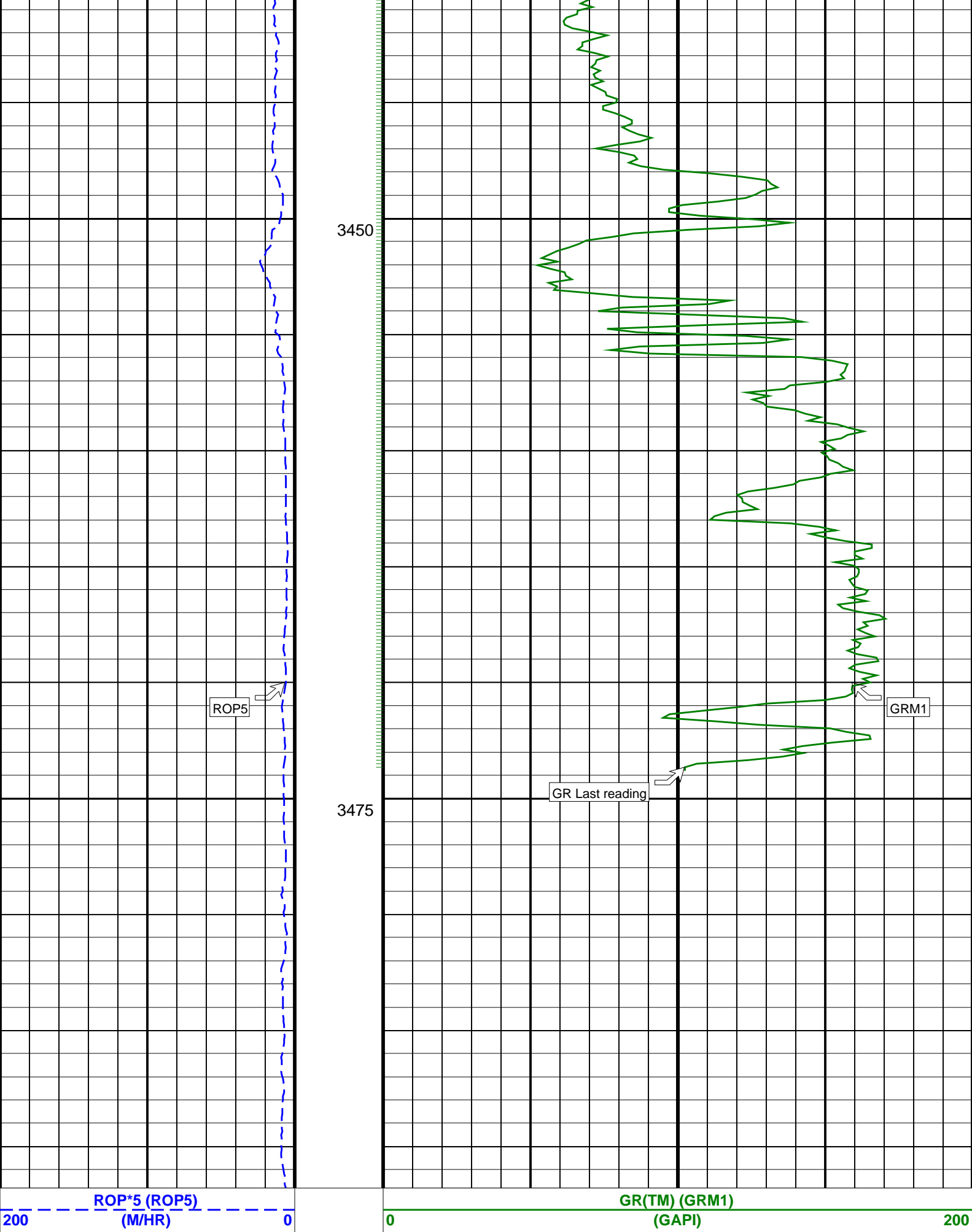
3375

See Remarks









PIP SUMMARY

GR(TM) PIP

## SCHLUMBERGER

Survey report 14-Sep-2004 12:53:44 Page 1 of 3

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

API number.....: Last survey date.....: 14-Sep-04  
 42.8 deg.

RIG.....: ISDL 453 MD of first survey.....: 2339.70 m  
 STATE.....: Victoria MD of last survey.....: 3491.00 m

----- Survey calculation methods----- Geomagnetic data -----  
 Method for positions.....: Minimum curvature Magnetic model.....: BGGM version 2003  
 Method for DLS.....: Mason & Taylor Magnetic date.....: 29-Aug-2004  
 Magnetic field strength...: 1199.58 HCNT  
 ----- Depth reference ----- Magnetic dec (+E/W-).....: 13.14 degrees  
 Permanent datum.....: Mean Sea Level Magnetic dip.....: -68.73 degrees  
 Depth reference.....: Driller's Depth  
 GL above permanent.....: -59.00 m ----- MWD survey Reference Criteria -----  
 KB above permanent.....: 27.91 m Reference G.....: 1000.03 mGal  
 DF above permanent.....: 27.91 m Reference H.....: 1199.58 HCNT  
 Reference Dip.....: -68.73 degrees  
 ----- Vertical section origin----- Tolerance of G.....: (+/-) 2.50 mGal  
 Latitude (+N/S-).....: 0.00 m Tolerance of H.....: (+/-) 6.00 HCNT  
 Departure (+E/W-).....: 0.00 m Tolerance of Dip.....: (+/-) 0.45 degrees  
 ----- Platform reference point----- Corrections -----  
 Latitude (+N/S-).....: -304.57 m Magnetic dec (+E/W-).....: 13.14 degrees  
 Departure (+E/W-).....: -304.57 m 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=Drmag Magnetic Correction

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 SCHLUMBERGER Survey Report

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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/100f)	DLS type	Srvy tool	Tool Corr
1	2339.70	42.24	122.92	0.00	1853.98	1285.32	-789.18	1027.85	1295.87	127.52	0.00	TIP	None
2	2370.23	45.12	126.14	30.53	1876.06	1306.33	-801.14	1045.21	1316.92	127.47	3.63	MWD	None
3	2398.02	44.56	126.06	27.79	1895.77	1325.83	-812.69	1061.04	1336.51	127.45	0.62	MWD	None
4	2426.51	43.32	124.70	28.49	1916.28	1345.51	-824.13	1077.15	1356.27	127.42	1.67	MWD	None
5	2454.92	43.29	123.12	28.41	1936.95	1364.96	-835.00	1093.32	1375.71	127.37	1.16	MWD	None
6	2483.86	43.60	121.48	28.94	1957.97	1384.84	-845.64	1110.15	1395.54	127.30	1.23	MWD	None
7	2512.25	44.18	121.58	28.39	1978.43	1404.52	-855.93	1126.92	1415.12	127.22	0.63	MWD	None
8	2540.84	44.92	121.38	28.59	1998.80	1424.57	-866.40	1144.03	1435.08	127.14	0.80	MWD	None
9	2569.37	43.81	120.98	28.53	2019.20	1444.52	-876.73	1161.09	1454.92	127.06	1.22	MWD	None
10	2598.21	43.61	120.70	28.84	2040.04	1464.44	-886.95	1178.20	1474.73	126.97	0.29	MWD	None
11	2627.02	43.24	121.07	28.81	2060.97	1484.25	-897.11	1195.20	1494.43	126.89	0.48	MWD	None
12	2655.51	43.25	122.24	28.49	2081.72	1503.76	-907.36	1211.81	1513.87	126.82	0.86	MWD	None
13	2684.17	44.65	124.22	28.66	2102.36	1523.62	-918.26	1228.45	1533.72	126.78	2.09	MWD	None
14	2712.97	42.72	125.62	28.80	2123.18	1543.44	-929.64	1244.76	1553.60	126.75	2.28	MWD	None
15	2741.46	43.19	125.14	28.49	2144.03	1562.78	-940.88	1260.59	1573.00	126.74	0.61	MWD	None
16	2770.13	43.95	124.26	28.67	2164.81	1582.48	-952.13	1276.83	1592.75	126.71	1.03	MWD	None
17	2798.78	43.58	123.35	28.65	2185.50	1602.25	-963.15	1293.30	1612.54	126.68	0.78	MWD	None
18	2827.53	43.12	122.43	28.75	2206.40	1621.97	-973.87	1309.87	1632.23	126.63	0.83	MWD	None
19	2856.18	44.61	122.49	28.65	2227.06	1641.80	-984.53	1326.62	1652.04	126.58	1.59	MWD	None
20	2884.87	45.10	122.55	28.69	2247.40	1662.02	-995.41	1343.69	1672.22	126.53	0.52	MWD	None
21	2908.51	44.95	122.76	23.64	2264.10	1678.73	-1004.43	1357.77	1688.91	126.49	0.27	MWD	None
22	2942.16	44.39	123.16	33.65	2288.04	1702.36	-1017.30	1377.61	1712.52	126.44	0.57	MWD	None
23	2971.42	43.63	123.67	29.26	2309.08	1722.66	-1028.49	1394.58	1732.82	126.41	0.87	MWD	None
24	3000.29	44.39	123.68	28.87	2329.84	1742.68	-1039.62	1411.28	1752.86	126.38	0.80	MWD	None
25	3028.64	44.11	124.48	28.35	2350.15	1762.41	-1050.70	1427.66	1772.62	126.35	0.67	MWD	None
26	3058.04	42.79	125.21	29.40	2371.49	1782.57	-1062.25	1444.25	1792.83	126.33	1.46	MWD	None
27	3085.69	42.75	124.69	27.65	2391.79	1801.28	-1073.01	1459.64	1811.60	126.32	0.39	MWD	None
28	3114.46	43.08	124.17	28.77	2412.86	1820.81	-1084.08	1475.80	1831.18	126.30	0.51	MWD	None
29	3143.15	43.27	124.07	28.69	2433.78	1840.40	-1095.09	1492.05	1850.80	126.28	0.21	MWD	None
30	3171.75	43.81	123.71	28.60	2454.52	1860.06	-1106.08	1508.41	1870.48	126.25	0.63	MWD	None

Seq	Measured	Incl	Azimuth	Course	TVD	Vertical	Displ	Displ	Total	At	DLS	Srvy Tool		
#	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)		
31	3200.60	44.41	123.68	28.85	2475.23	1880.10	-1117.22	1525.12	1890.54	126.22	0.63	MWD	None	
32	3229.06	40.75	126.43	28.46	2496.19	1899.28	-1128.26	1540.88	1909.79	126.21	4.40	MWD	None	
33	3257.94	39.00	127.27	28.88	2518.35	1917.67	-1139.36	1555.70	1928.30	126.22	1.93	MWD	None	
34	3286.60	36.20	129.73	28.66	2541.05	1934.97	-1150.24	1569.39	1945.77	126.24	3.38	MWD	None	
35	3315.17	34.57	131.07	28.57	2564.35	1951.26	-1160.96	1581.99	1962.27	126.27	1.93	MWD	None	
36	3343.58	32.76	132.73	28.41	2587.99	1966.68	-1171.47	1593.71	1977.94	126.32	2.18	MWD	None	
37	3371.90	32.44	133.37	28.32	2611.85	1981.55	-1181.88	1604.86	1993.10	126.37	0.51	MWD	None	
38	3401.06	32.24	134.16	29.16	2636.49	1996.72	-1192.67	1616.13	2008.57	126.43	0.49	MWD	None	
39	3427.39	31.81	135.26	26.33	2658.81	2010.23	-1202.49	1626.05	2022.38	126.48	0.84	MWD	None	
40	3458.35	30.98	136.77	30.96	2685.24	2025.75	-1214.10	1637.25	2038.29	126.56	1.13	MWD	None	
41	3470.52	30.00	137.67	12.17	2695.72	2031.65	-1218.63	1641.45	2044.36	126.59	2.71	MWD	None	
41.4	deg.													

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Company: **ESSO Australia Pty. Ltd.****Schlumberger**Well: **MLA-A10AST**Field: **Turrum**Rig: **ISDL 453**State: **Victoria****Gamma Ray Service****1:200 Measured Depth****Real Time Log**