

















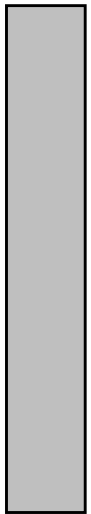






Run number		1	2	3	4						
Bit size	in	12.25	12.25	12.25	12.25						
Bit start depth	m	626.0	1317.0	1394.0	2043.0						
Bit end depth	m	1317.0	1394.0	2043.0	2522.0						
Top interval logged	m	626.0	1295.3	1369.7	2018.7						
Bottom interval logged	m	1295.2	1370.2	2018.7	2521.4						
Begin log: time		13:10	07:10	11:53	19:46						
Begin log: date		6-Feb-08	9-Feb-08	10-Feb-08	17-Feb-08						
End log: time		16:00	22:56	10:30	13:23						
End log: date		8-Feb-08	9-Feb-08	16-Feb-08	20-Feb-08						
Mud data											
Depth	m	1319.1	1394.0	2043.0	2522.0						
Type		Accolade SBM	Accolade SBM	Accolade SBM	Accolade SBM						
Mud weight	ppg	627.0	11.3	11.3	11.3						
Solids	%	17.3	16.9	18.3	17.2						
Chlorides	ppm	44103	43615	41731	43349						
Rm		N/A	N/A	N/A	N/A						
Rmf		N/A	N/A	N/A	N/A						
Rmc		N/A	N/A	N/A	N/A						

Potassium		N/A	N/A	N/A	N/A						
Environmental data											
GR											
Mud weight	ppg	11.3	11.3	11.3	11.3						
Bit size	in	12.25	12.25	12.25	12.25						
Resistivity											
Neutron porosity											
Hole Size		N/A	N/A	N/A	N/A						
Mud weight		N/A	N/A	N/A	N/A						
Temperature		N/A	N/A	N/A	N/A						
Mud salinity		N/A	N/A	N/A	N/A						
Formation salinity		N/A	N/A	N/A	N/A						
Recording rate 1	SEC	N/A	N/A	N/A	N/A						
Recording rate 2	SEC	N/A	N/A	N/A	N/A						
Filtering GR		3 pts	3 pts	3 pts	3 pts						
Filtering density		N/A	N/A	N/A	N/A						
Filtering Neutron		N/A	N/A	N/A	N/A						
Company representative		R. Moore	G. Doty								
Anadrill personnel		M. Lu	M. Sihite	C. Soper	M. How						

<p style="text-align: center;">DISCLAIMER</p> <p>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.</p>		
OTHER SERVICES FOR RUN1 Directional Drilling Directional Surveys Annular Pressure & Temperature	OTHER SERVICES FOR RUN2 Directional Drilling Directional Surveys Annular Pressure & Temperature	OTHER SERVICES FOR RUN3 Directional Drilling Directional Surveys Annular Pressure & Temperature
REMARKS: RUN NUMBER 1 Depth is referenced to Driller's Depth All data presented is real time data. Gamma ray is corrected for mud weight, tool size and bit size. POOH due to motor failure.	REMARKS: RUN NUMBER 2 Depth is referenced to Driller's Depth All data presented is real time data. Gamma ray is corrected for mud weight, tool size and bit size. POOH due to motor failure.	REMARKS: RUN NUMBER 3 Depth is referenced to Driller's Depth All data presented is real time data. Gamma ray is corrected for mud weight, tool size and bit size. POOH due to motor failure.


EQUIPMENT DESCRIPTION		
RUN1	RUN2	RUN3
DOWNHOLE EQUIPMENT	DOWNHOLE EQUIPMENT	DOWNHOLE EQUIPMENT

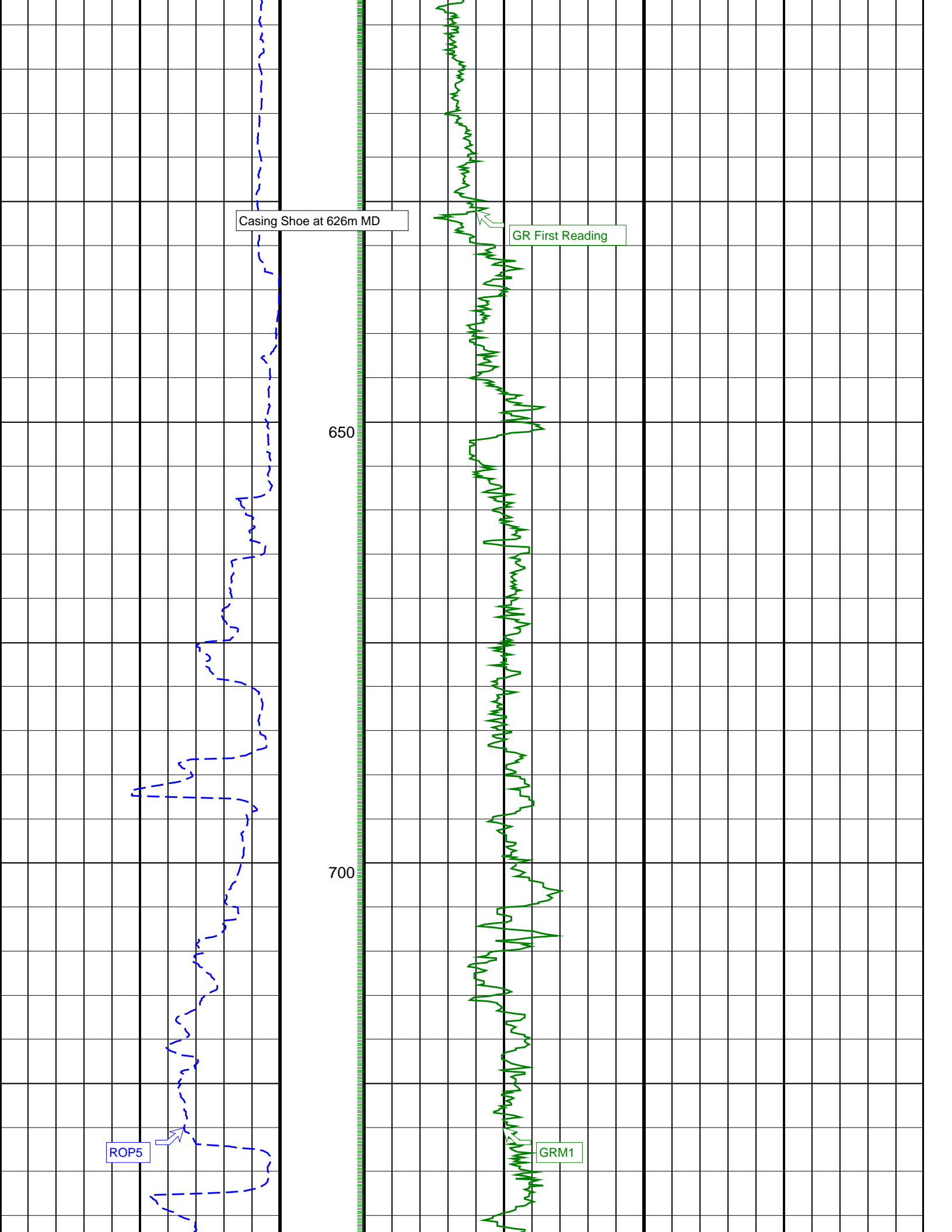
DOWNHOLE EQUIPMENT			DOWNHOLE EQUIPMENT			DOWNHOLE EQUIPMENT		
8–1/4" PowerPulse*		28.87	8–1/4" PowerPulse*		28.81	8–1/4" PowerPulse*		29.28
MDC: DE–VR50 MEC: BB–1281 MDI: CA–1565 MGR: AA–565 DHS: V8.0C04			MDC: DE–VR50 MEC: BB–1281 MDI: CA–1565 MGR: AA–565 DHS: V8.0C04			MDC: DE–VR50 MEC: BB–1281 MDI: CA–1565 MGR: AA–565 DHS: V8.0C04		
	D&I	— 24.51		D&I	— 24.45		D&I	— 24.92
	GR	— 23.86		GR	— 23.80		GR	— 24.27
	APWD	— 21.26		APWD	— 21.20		APWD	— 21.67
8" NM Pony S/N: 7505		20.40	8" NM Pony S/N: 7505		20.34	8" NM Pony S/N: 7505		20.81
8" NM Pony S/N: L987		17.95	8" NM Pony S/N: L987		17.89	8" NM Pony S/N: L987		18.36
8" NM Pony S/N: SBD4465		16.42	8" NM Pony S/N: SBD4465		16.36	8" NM Pony S/N: SBD4465		16.83
11–7/8" NM String Stabilizer S/N: SBD3169		13.37	11–7/8" NM String Stabilizer S/N: SBD3169		13.31	11–7/8" NM String Stabilizer S/N: SBD3169		13.78
8–1/4" Float Sub S/N: 58834–3		10.87	8–1/4" Float Sub S/N: 58834–3		10.81	8–1/4" Float Sub S/N: 58834–3		11.28
A962 PowePak* Motor S/N: 05458 1.15 deg. Bent Housing		10.03	A962 PowePak* Motor S/N: 03389 1.15 deg. Bent Housing		9.97	A962 PowePak* Motor S/N: 06235 1.15 deg. Bent Housing		10.44
12–1/4" Reed–Hyc PDC Bit S/N: 218050		— 0.00 0.29	12–1/4" Reed–Hyc PDC Bit S/N: 218050		— 0.00 0.29	12–1/4" Reed–Hyc PDC Bit S/N: 218050		— 0.00 0.29
Maximum string diameter 12.25 in. All lengths in Meters			Maximum string diameter 12.25 in. All lengths in Meters			Maximum string diameter 12.25 in. All lengths in Meters		

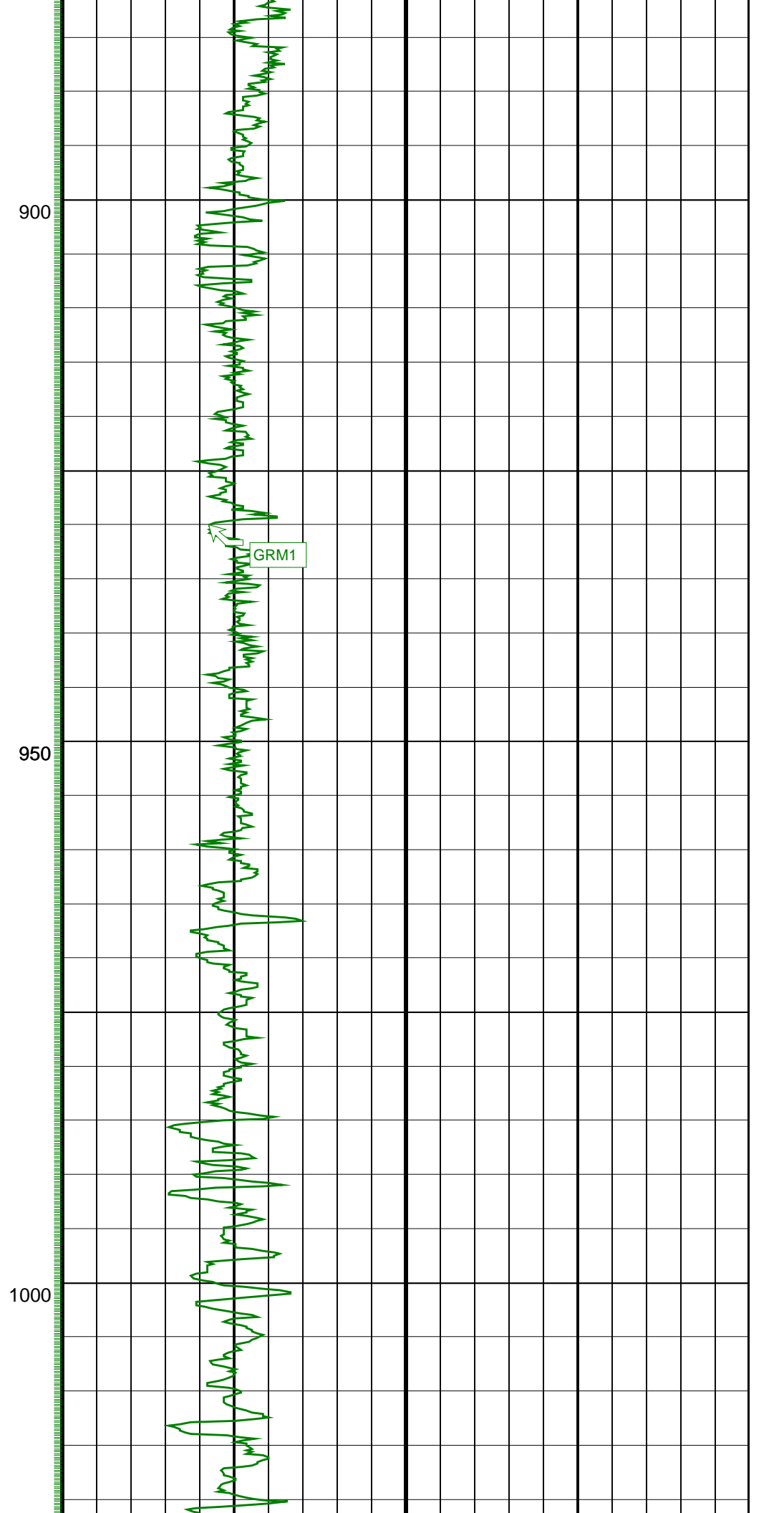
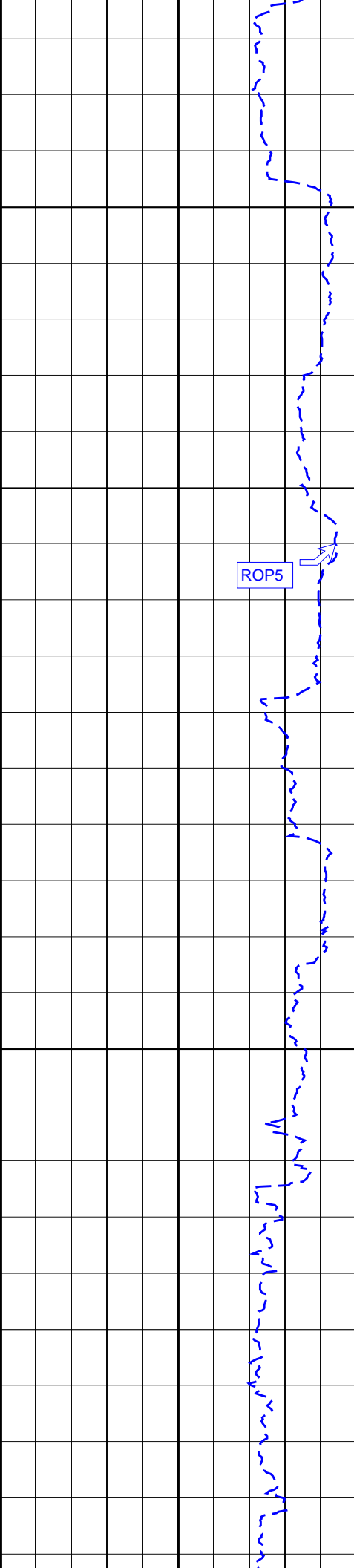
DISCLAIMER

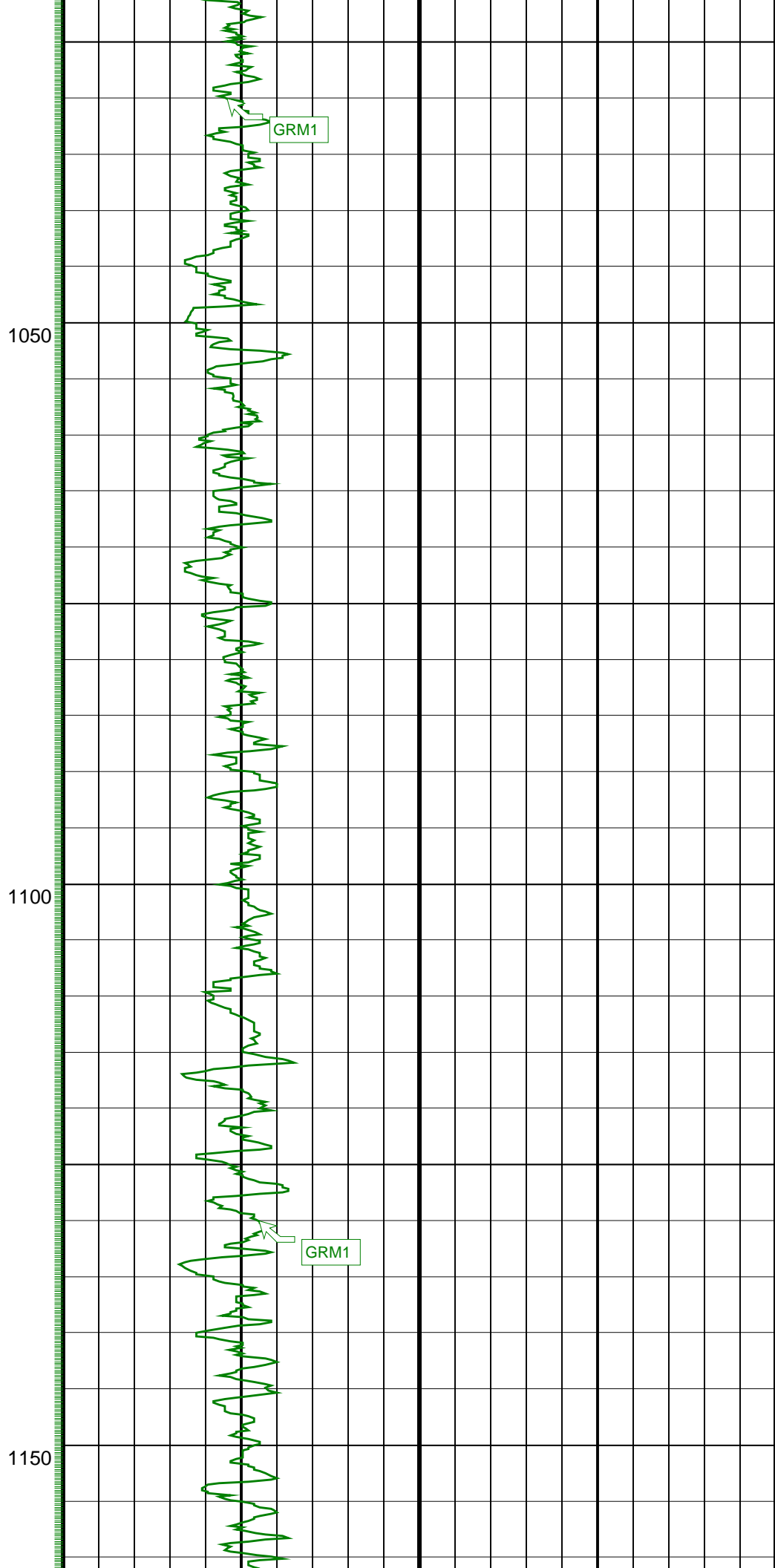
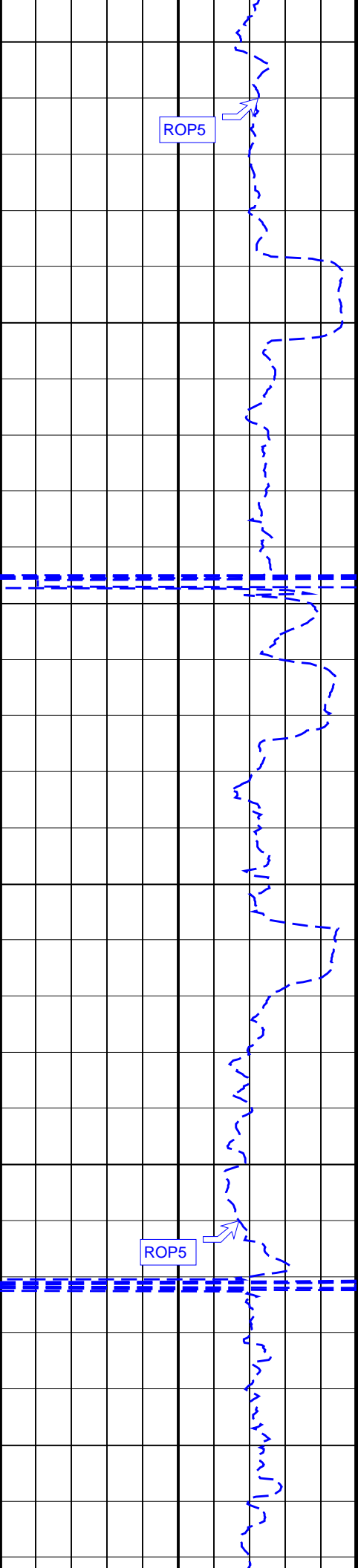
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (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.

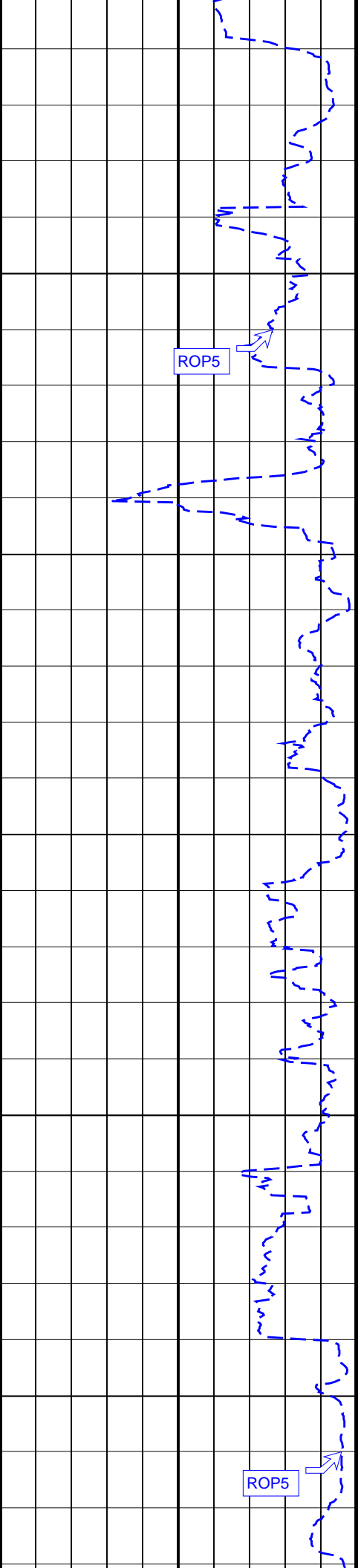
OTHER SERVICES FOR RUN4 Diretional Drilling Directional Surveys Shock and Vibration		
REMARKS: RUN NUMBER 4 Depth is referenced to Driller's Depth All data presented is real time data. Gamma ray is corrected for mud weight, tool size and bit size. Data from 2019 to 2054 m is ream data. POOH due to reaching 12.25" section TD.		

EQUIPMENT DESCRIPTION		
RUN4	RUN	RUN
<p>DOWNHOLE EQUIPMENT</p> <p>8-1/4" TeleScope* 14.87</p> <p>MDC: VE14 MEC: 373 MDI: 1841 MVC: AA-114 DHS: 9.2C02</p>  <p>D&I 10.53</p>		





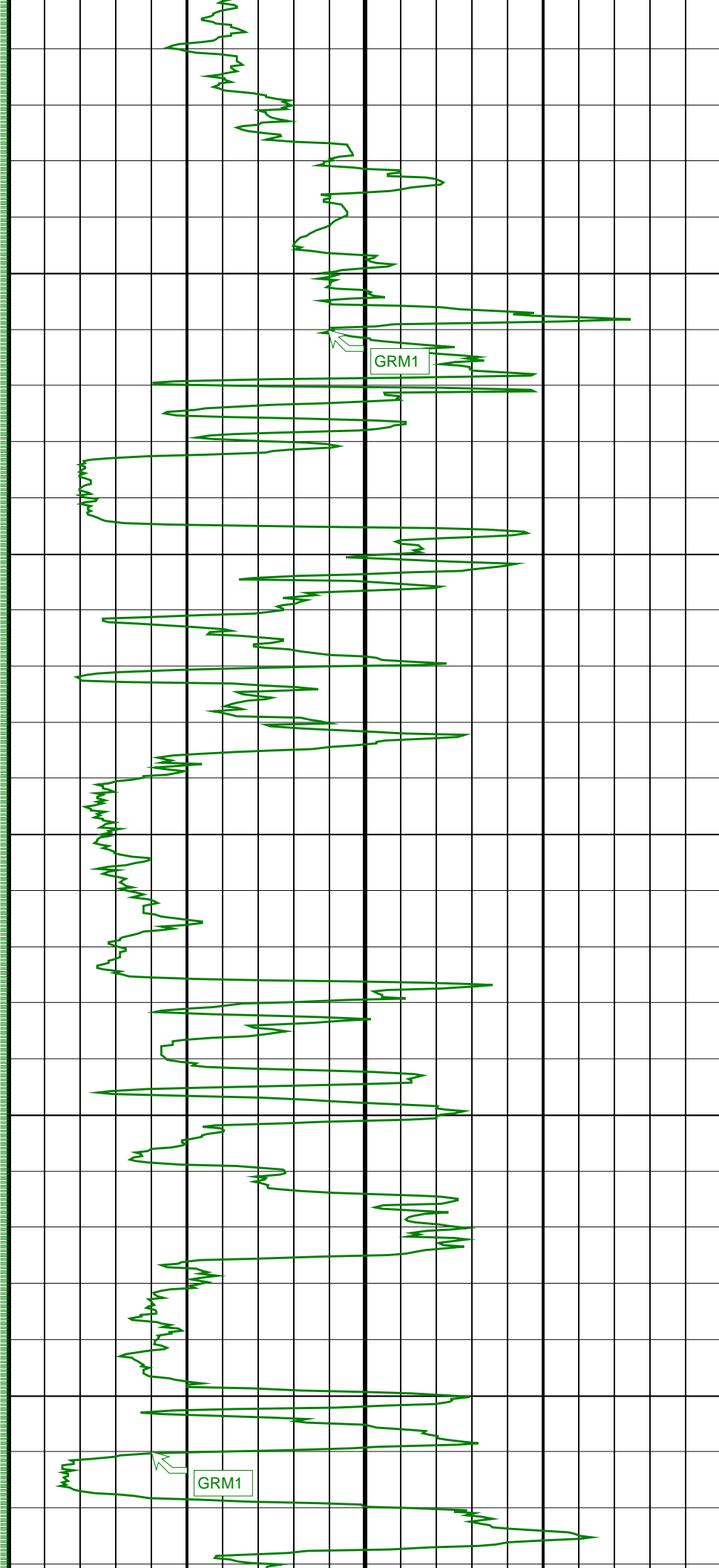


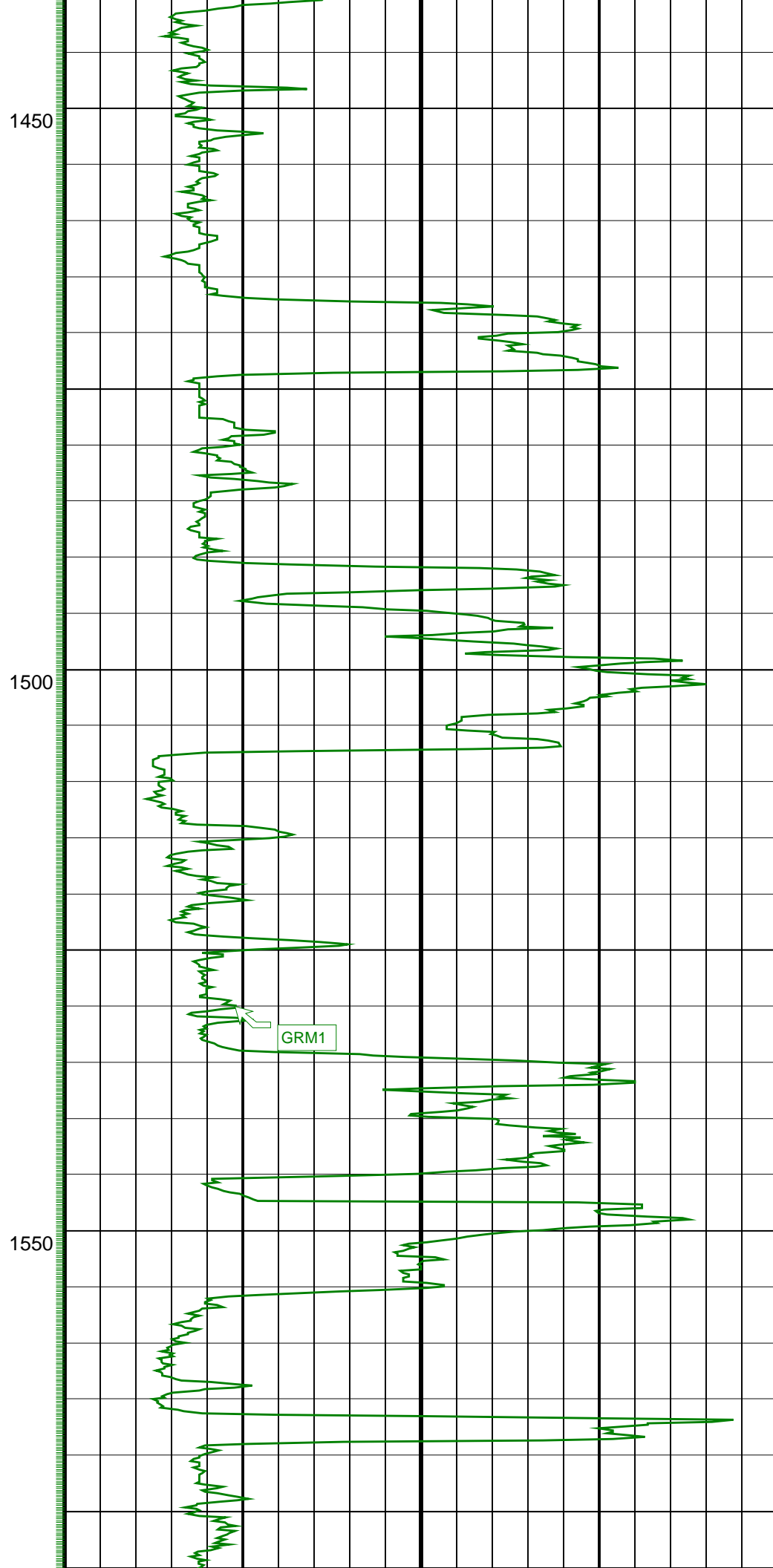
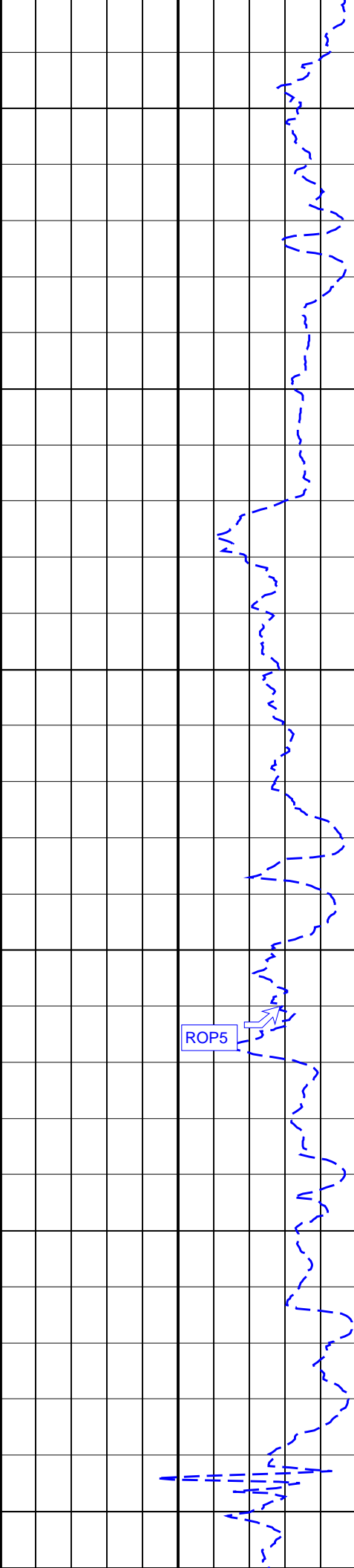


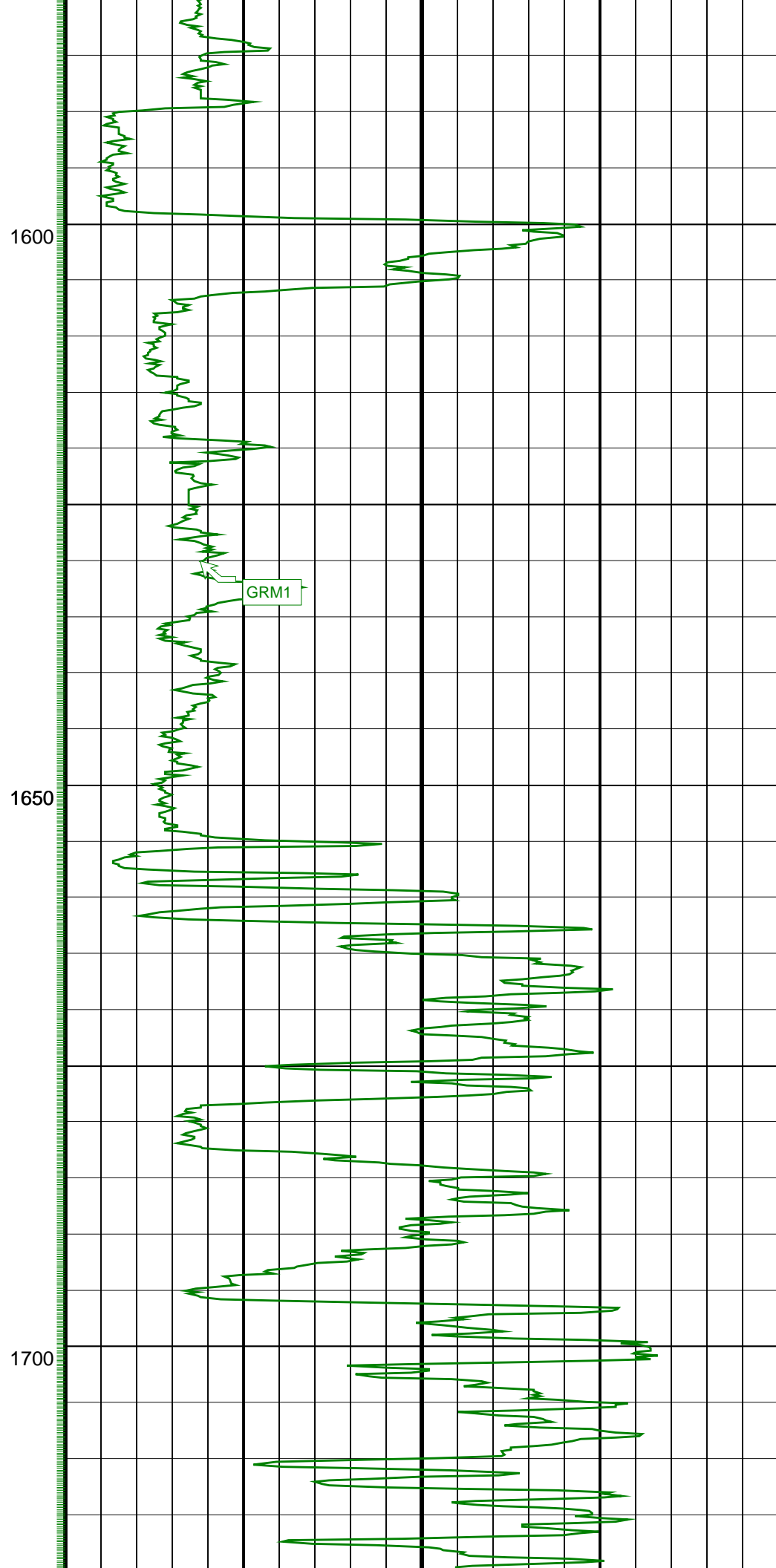
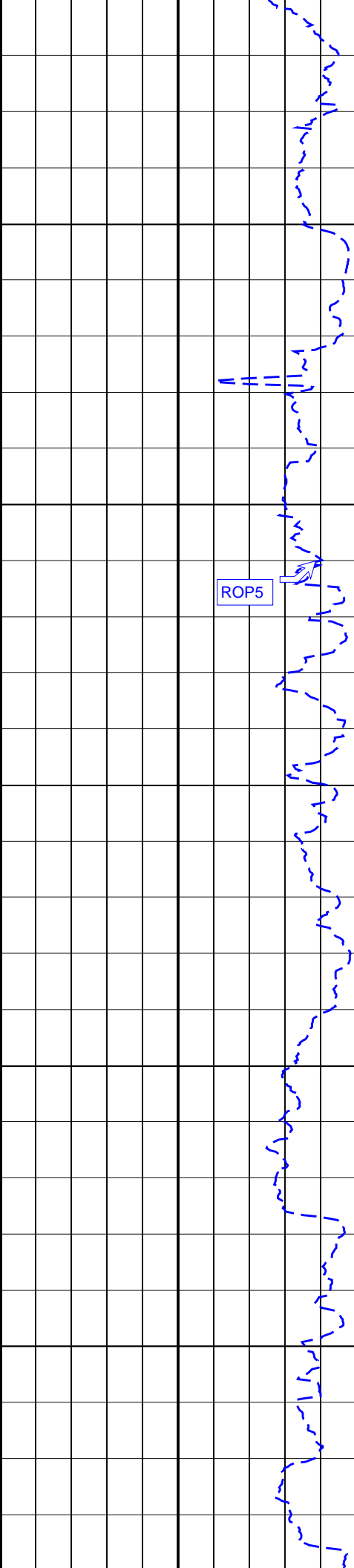
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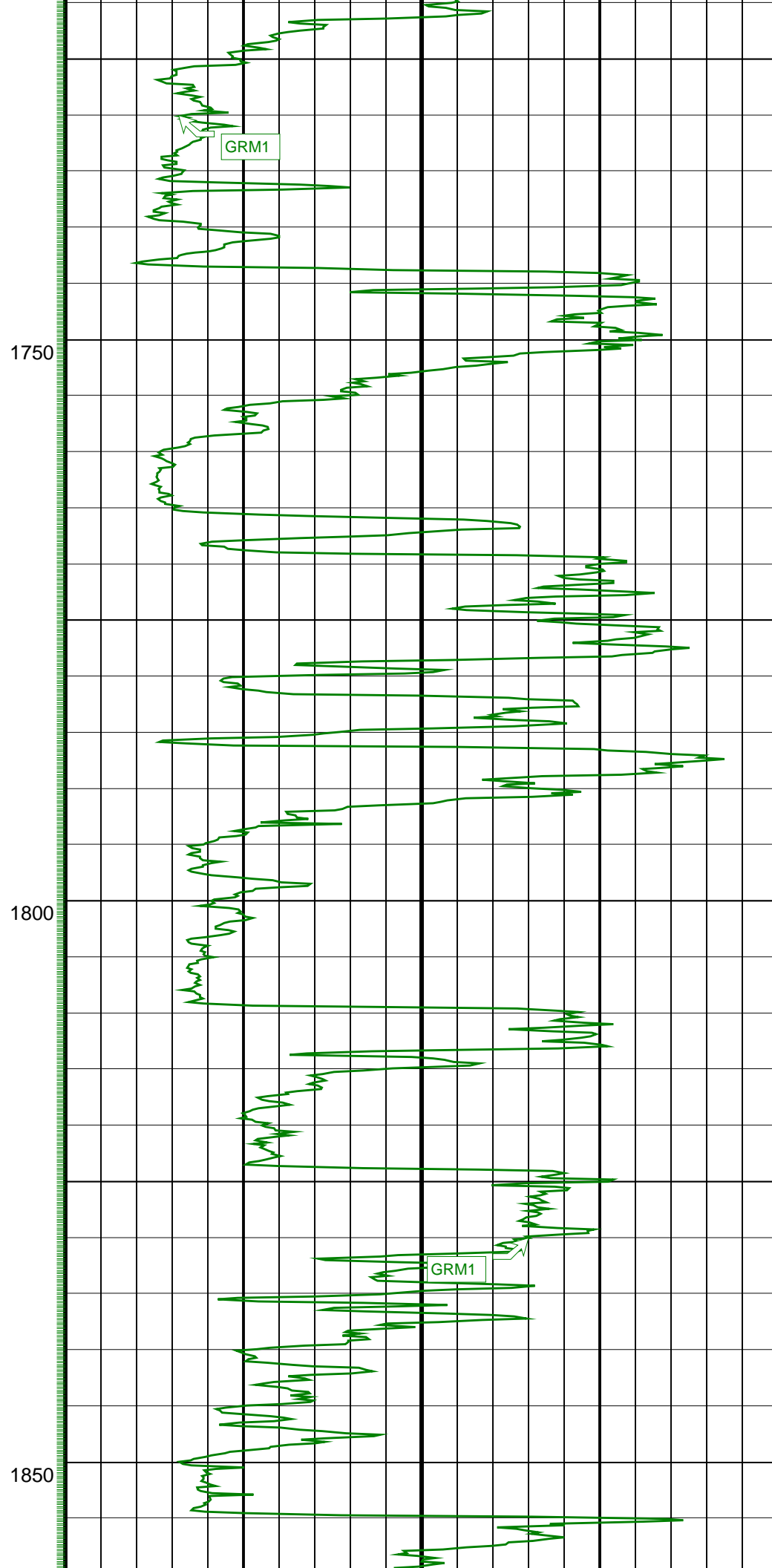
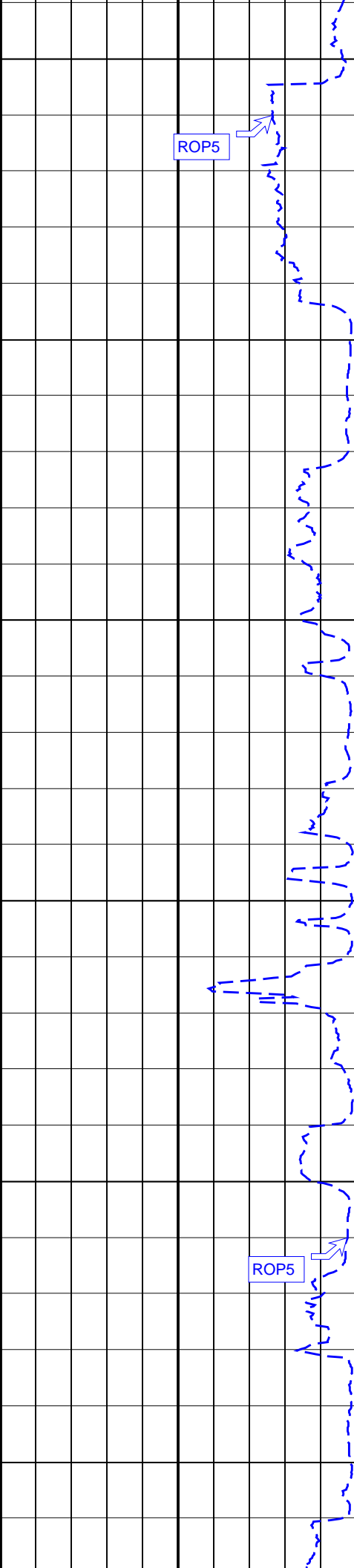
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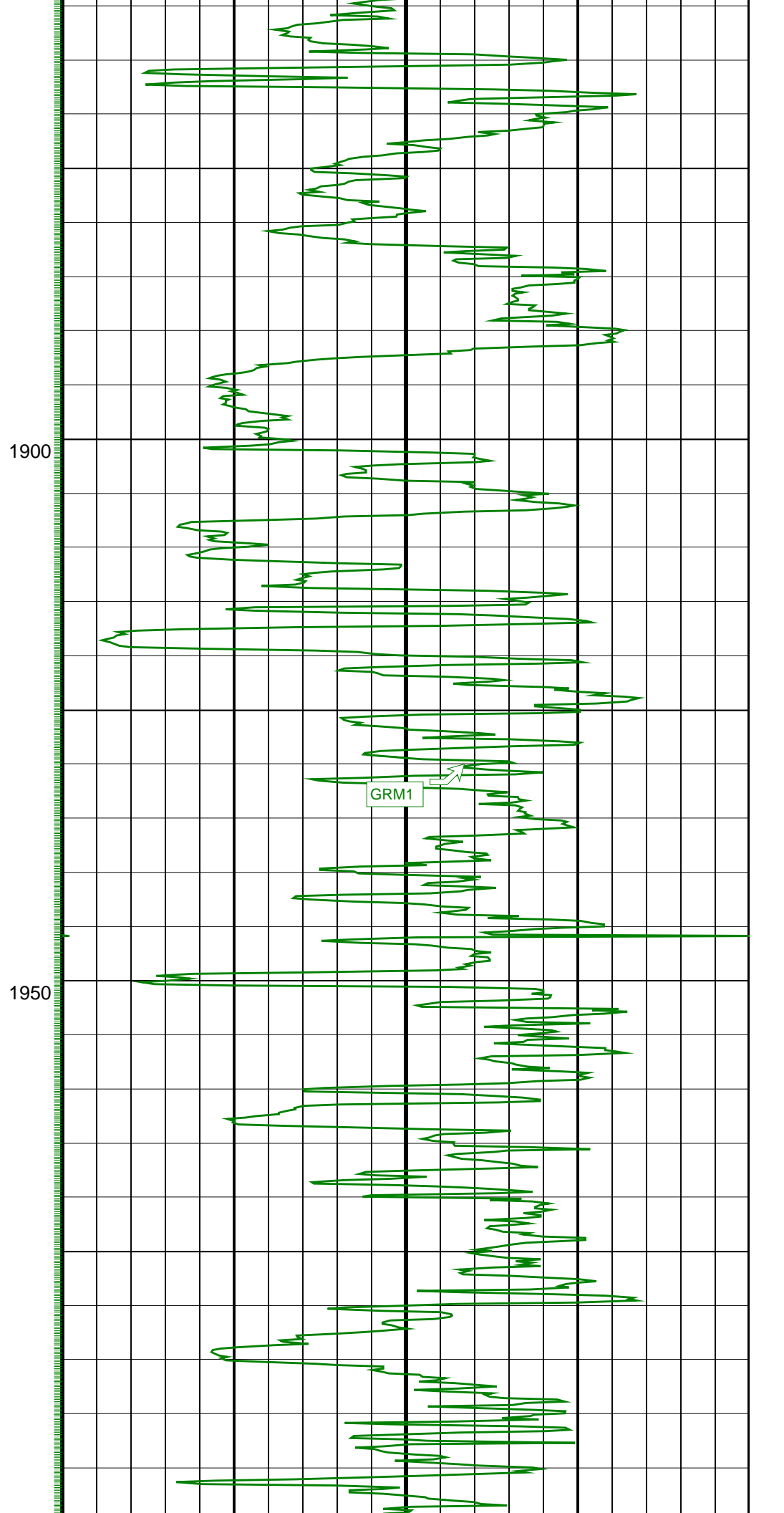
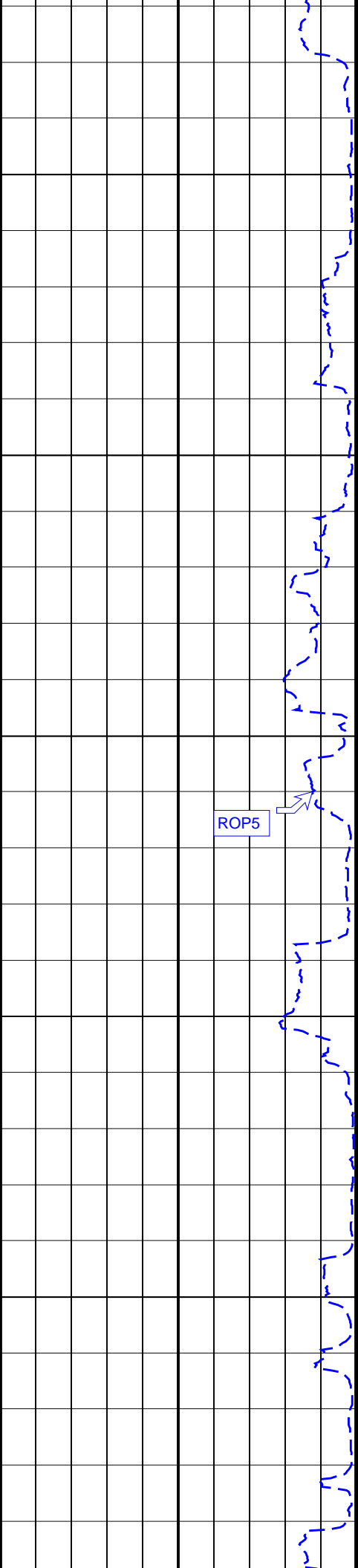
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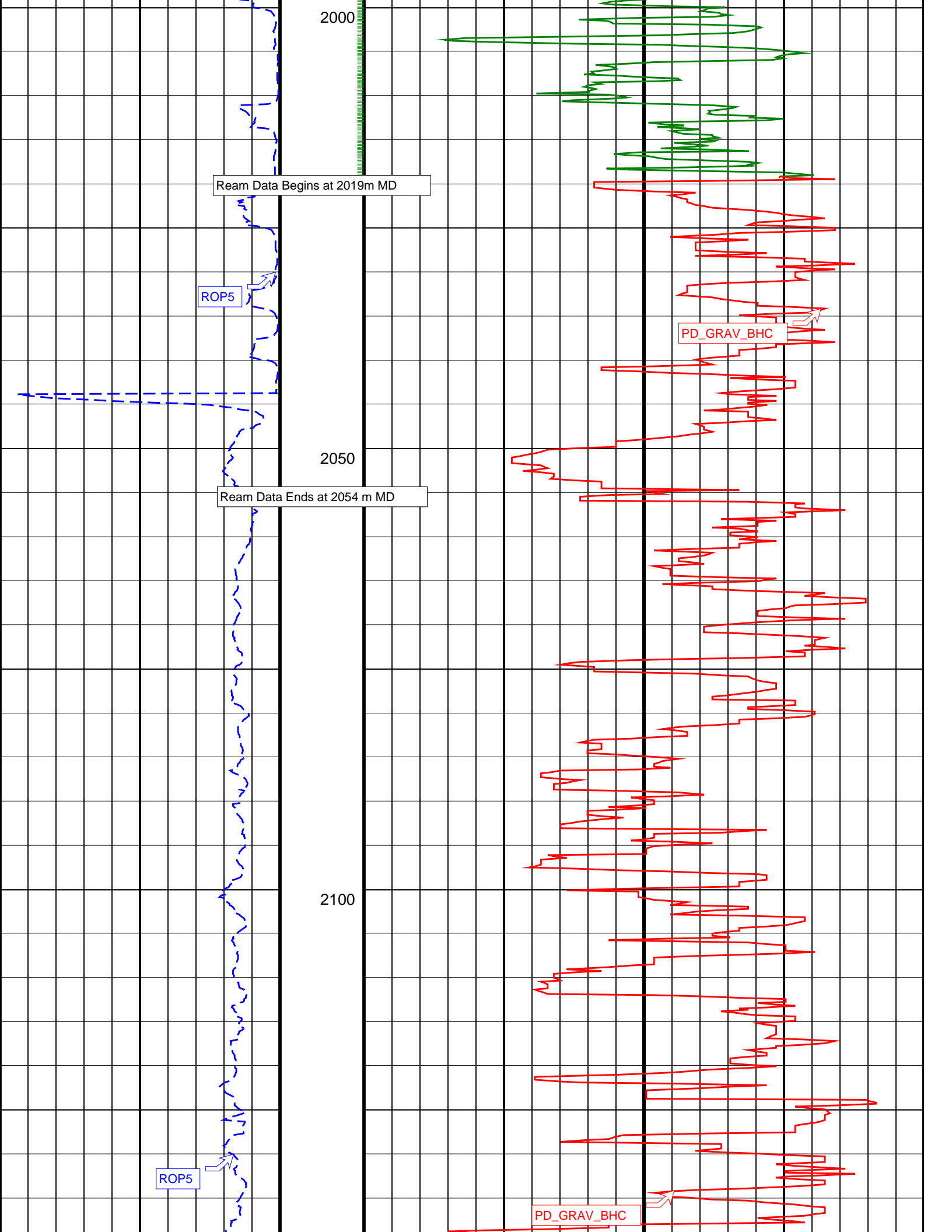


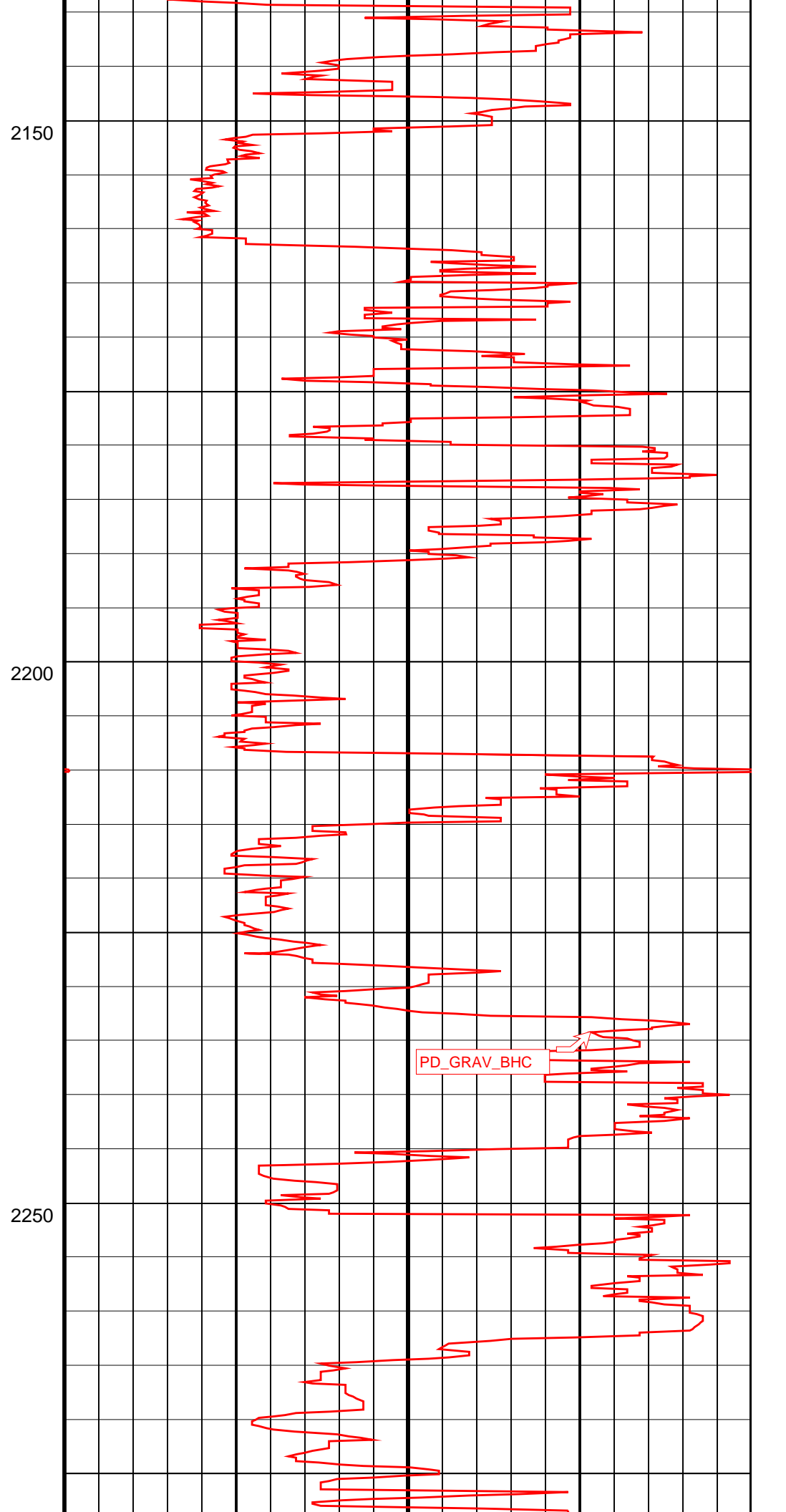
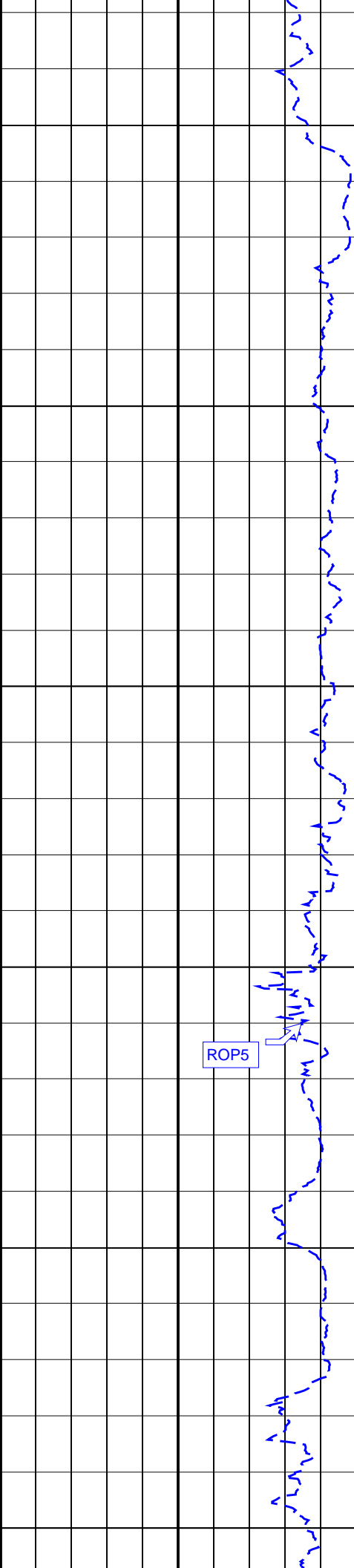


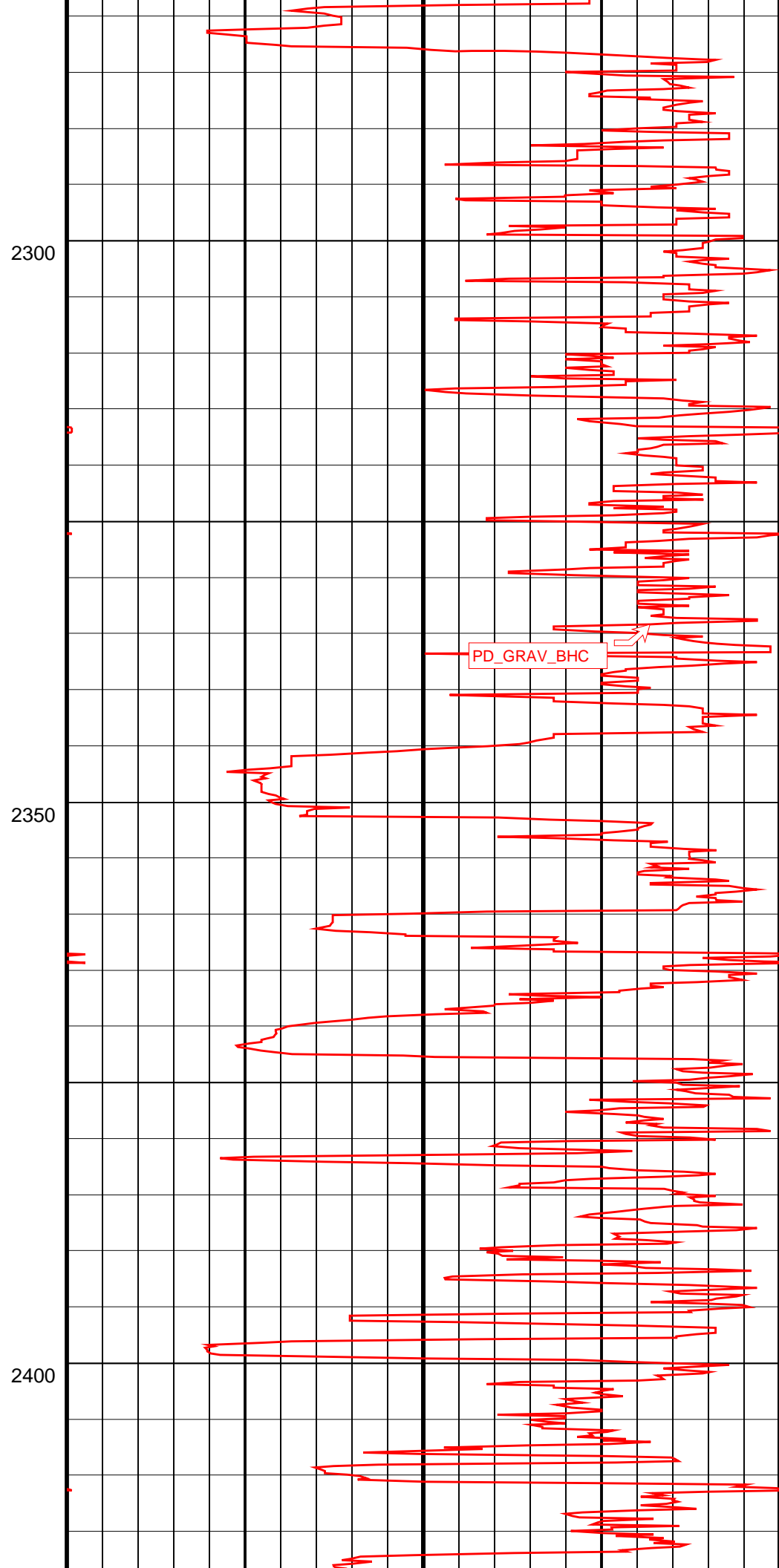
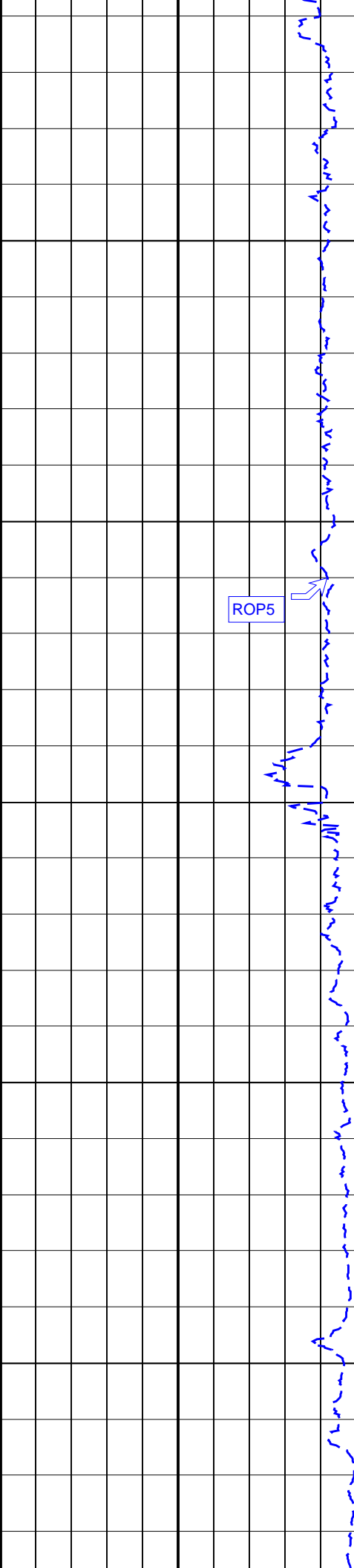


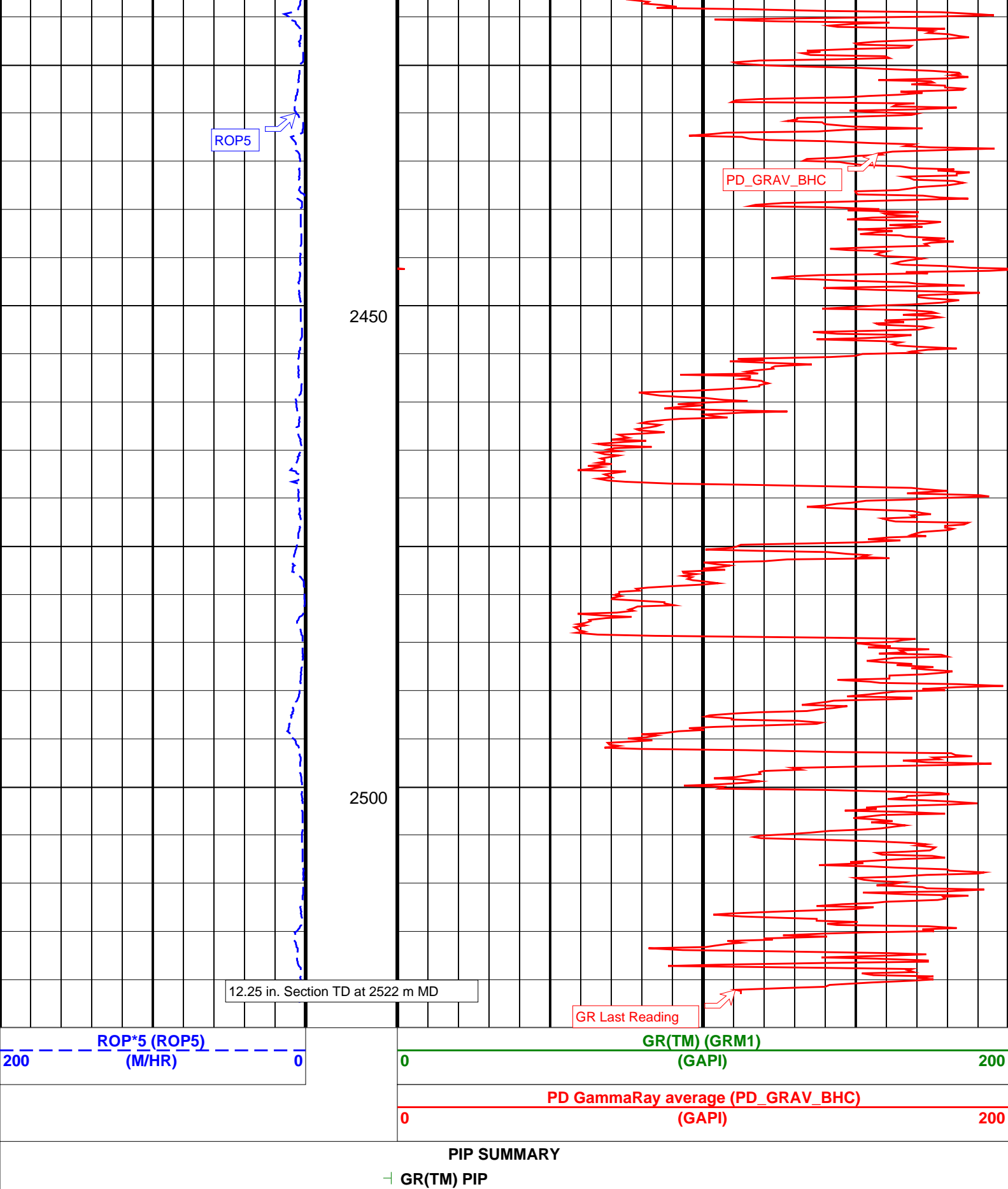












SCHLUMBERGER

Survey report

7-May-2008 04:34:36

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

Well.....: SNA-A21A
Service Order no.....: 07ASQ0022
Engineer.....: ML/MS

RIG.....: ISDL 175
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.....: -55.00 m
KB above permanent.....: Top Drive
DF above permanent.....: 41.70 m

----- Vertical section origin-----
Latitude (+N/S-).....: -3.69 m
Departure (+E/W-).....: 4.78 m

----- Platform reference point-----
Latitude (+N/S-).....:
Departure (+E/W-).....:

Azimuth from Vsect Origin to target: 312.96 degrees

Spud date.....: 05-Feb-08
Last survey date.....: 18-Mar-08
Total accepted surveys....: 91
MD of first survey.....: 625.00 m
MD of last survey.....: 3346.89 m

----- Geomagnetic data -----
Magnetic model.....: BGGM version 2007
Magnetic date.....: 01-Feb-2008
Magnetic field strength...: 1197.84 HCNT
Magnetic dec (+E/W-).....: 13.01 degrees
Magnetic dip.....: -68.71 degrees

----- MWD survey Reference Criteria -----
Reference G.....: 1000.02 mGal
Reference H.....: 1197.84 HCNT
Reference Dip.....: -68.71 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.01 degrees
Grid convergence (+E/W-)..: -0.63 degrees
Total az corr (+E/W-).....: 13.64 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

[(c)2008 IDEAL ID13_OC_08]
SCHLUMBERGER Survey Report

7-May-2008 04:34:36

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/10m)	Srvy tool type	Tool Corr (deg)
1	625.00	1.38	351.20	0.00	623.39	27.34	32.16	0.80	32.17	1.42	0.00	TIP	None
2	652.41	5.45	320.65	27.41	650.75	28.89	33.49	-0.08	33.49	359.87	1.58	MWD	None
3	705.85	12.48	317.04	53.44	703.50	37.18	39.69	-5.63	40.09	351.93	1.32	MWD	None
4	725.21	13.02	315.52	19.36	722.38	41.44	42.78	-8.58	43.63	348.66	0.33	MWD	None
5	754.52	14.44	311.84	29.31	750.86	48.40	47.57	-13.62	49.48	344.03	0.57	MWD	None
6	784.09	16.51	312.18	29.57	779.35	56.28	52.85	-19.48	56.33	339.77	0.70	MWD	None
7	813.12	18.78	313.53	29.03	807.02	65.08	58.84	-25.92	64.30	336.22	0.79	MWD	None
8	842.44	21.59	313.20	29.32	834.53	75.20	65.78	-33.28	73.72	333.17	0.96	MWD	None
9	871.68	24.22	311.73	29.24	861.46	86.58	73.46	-41.68	84.46	330.43	0.92	MWD	None
10	900.94	26.82	310.10	29.26	887.87	99.17	81.71	-51.21	96.43	327.92	0.92	MWD	None
11	930.15	29.84	307.85	29.21	913.58	113.00	90.42	-61.99	109.63	325.56	1.10	MWD	None
12	959.50	32.87	307.23	29.35	938.64	128.20	99.72	-74.10	124.23	323.38	1.04	MWD	None
13	989.11	33.88	307.39	29.61	963.36	144.41	109.59	-87.06	139.96	321.54	0.34	MWD	None
14	1018.15	34.17	307.26	29.04	987.43	160.58	119.44	-99.98	155.76	320.07	0.10	MWD	None
15	1047.09	34.15	308.61	28.94	1011.38	176.76	129.43	-112.79	171.68	318.93	0.26	MWD	None
16	1078.04	34.14	309.60	30.95	1037.00	194.10	140.39	-126.27	188.82	318.03	0.18	MWD	None
17	1107.99	33.85	312.28	29.95	1061.83	210.83	151.36	-138.92	205.45	317.45	0.51	MWD	None
18	1137.64	34.20	312.71	29.65	1086.40	227.42	162.57	-151.15	221.98	317.08	0.14	MWD	None
19	1165.35	34.55	312.45	27.71	1109.27	243.06	173.15	-162.67	237.58	316.79	0.14	MWD	None
20	1195.05	34.67	311.75	29.70	1133.72	259.93	184.46	-175.19	254.40	316.48	0.14	MWD	None
21	1223.98	34.59	311.04	28.93	1157.52	276.36	195.33	-187.52	270.78	316.17	0.14	MWD	None
22	1253.83	34.61	311.01	29.85	1182.09	293.30	206.46	-200.31	287.66	315.87	0.01	MWD	None
23	1283.30	35.06	310.70	29.47	1206.28	310.13	217.47	-213.04	304.43	315.59	0.16	MWD	None
24	1311.04	35.22	310.15	27.74	1228.97	326.08	227.82	-225.20	320.34	315.33	0.13	MWD	None
25	1339.83	34.49	309.08	28.79	1252.59	342.50	238.31	-237.87	336.71	315.05	0.33	MWD	None
26	1368.38	34.54	308.77	28.55	1276.11	358.64	248.48	-250.46	352.80	314.77	0.06	MWD	None
27	1398.22	34.75	309.47	29.84	1300.66	375.56	259.18	-263.62	369.69	314.51	0.15	MWD	None
28	1427.62	33.94	311.69	29.40	1324.94	392.13	269.97	-276.21	386.23	314.34	0.51	MWD	None
29	1457.22	33.59	312.30	29.60	1349.55	408.58	280.97	-288.44	402.67	314.25	0.16	MWD	None
30	1486.18	33.57	312.37	28.96	1373.67	424.60	291.76	-300.28	418.68	314.18	0.02	MWD	None
31	1515.35	34.00	311.71	29.17	1397.92	440.82	302.62	-312.33	434.89	314.10	0.19	MWD	None
32	1545.07	34.17	310.50	29.72	1422.53	457.46	313.57	-324.88	451.52	313.99	0.24	MWD	None
33	1573.99	33.63	309.97	28.92	1446.54	473.58	323.99	-337.19	467.62	313.86	0.21	MWD	None
34	1602.74	32.45	310.56	28.75	1470.64	489.23	334.12	-349.15	483.27	313.74	0.43	MWD	None
35	1632.66	31.89	310.51	29.92	1495.96	505.15	344.47	-361.26	499.17	313.64	0.19	MWD	None
36	1661.99	30.57	310.54	29.33	1521.04	520.34	354.36	-372.82	514.36	313.55	0.45	MWD	None
37	1691.42	28.92	310.18	29.43	1546.59	534.93	363.81	-383.95	528.94	313.46	0.56	MWD	None
38	1720.46	27.60	309.76	29.04	1572.17	548.66	372.64	-394.48	542.66	313.37	0.46	MWD	None
39	1750.04	26.32	309.58	29.58	1598.54	562.05	381.21	-404.80	556.04	313.28	0.43	MWD	None
40	1779.99	24.23	309.89	29.95	1625.62	574.81	389.38	-414.64	568.81	313.20	0.70	MWD	None

42	1837.32	20.99	310.77	28.34	1678.49	596.94	403.72	-431.51	590.93	313.09	0.65	MWD	None
43	1867.39	18.74	310.60	30.07	1706.77	607.15	410.39	-439.26	601.14	313.05	0.75	MWD	None
44	1897.11	16.67	309.64	29.72	1735.08	616.17	416.21	-446.17	610.16	313.01	0.70	MWD	None
45	1926.28	15.62	309.74	29.17	1763.10	624.27	421.39	-452.41	618.26	312.97	0.36	MWD	None
46	1955.02	13.10	310.42	28.74	1790.94	631.39	425.98	-457.86	625.38	312.93	0.88	MWD	None
47	1984.70	10.07	310.16	29.68	1820.01	637.34	429.83	-462.41	631.33	312.91	1.02	MWD	None
48	2013.75	7.32	312.94	29.05	1848.72	641.73	432.73	-465.70	635.72	312.90	0.96	MWD	None
49	2044.10	4.92	317.60	30.35	1878.90	644.96	435.01	-468.00	638.95	312.91	0.81	PUP	None
50	2073.22	3.32	318.41	29.12	1907.94	647.05	436.56	-469.40	641.03	312.92	0.55	PUP	None
51	2102.90	1.71	322.36	29.68	1937.59	648.34	437.56	-470.24	642.33	312.94	0.55	PUP	None
52	2131.95	0.17	329.67	29.05	1966.64	648.81	437.94	-470.53	642.80	312.95	0.53	PUP	None
53	2161.88	0.06	37.16	29.93	1996.57	648.85	437.99	-470.54	642.84	312.95	0.05	PUP	None
54	2191.09	0.14	285.89	29.21	2025.78	648.89	438.01	-470.57	642.87	312.95	0.06	PUP	None
55	2220.65	0.11	151.26	29.56	2055.34	648.89	438.00	-470.59	642.88	312.95	0.08	PUP	None
56	2249.63	0.14	116.42	28.98	2084.32	648.83	437.96	-470.54	642.82	312.95	0.03	PUP	None
57	2279.10	0.14	131.90	29.47	2113.79	648.76	437.92	-470.48	642.75	312.95	0.01	PUP	None
58	2308.26	0.14	57.11	29.16	2142.95	648.72	437.91	-470.43	642.70	312.95	0.06	PUP	None
59	2337.63	0.17	15.68	29.37	2172.32	648.73	437.97	-470.38	642.71	312.96	0.04	PUP	None
60	2366.84	0.15	276.78	29.21	2201.53	648.78	438.02	-470.41	642.77	312.96	0.08	PUP	None
61	2396.12	0.14	172.53	29.28	2230.81	648.78	437.99	-470.44	642.77	312.95	0.08	PUP	None
62	2425.74	0.21	73.80	29.62	2260.43	648.73	437.97	-470.39	642.71	312.96	0.09	PUP	None
63	2454.71	0.29	12.45	28.97	2289.40	648.74	438.05	-470.32	642.72	312.97	0.09	PUP	None
64	2483.64	0.18	307.41	28.93	2318.33	648.82	438.15	-470.34	642.81	312.97	0.09	PUP	None
65	2511.29	0.17	271.05	27.65	2345.98	648.89	438.18	-470.42	642.88	312.97	0.04	PUP	None

Company:

ESSO Australia Pty Ltd

Well:

SNA A21A

Field:

Snapper

Rig:

ISDL 175

State:

Victoria

Gamma Ray Service

1:500 Measured Depth

Real Time Log

Schlumberger

12.25 in. Section