

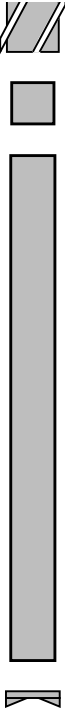
Company: **ESSO Australia Pty. Ltd.**Well: **MLA A22A**Field: **Turrum**Rig: **ISDL 453**State: **Victoria**

PowerPulse – Gamma Ray 1:500 True Vertical Depth Real Time Log

PowerPulse – Gamma Ray 1:500 True Vertical Depth Real Time Log									
Rig: ISDL 453		Field: Turrum		Location: Bass Strait		Well: MLA A22A		Company: ESSO Australia Pty. Ltd.	
Depth logged: 1900.0 m To 3598.8 m		Date logged: 27-May-04To 10-June-04		Mag decl: 13.13 deg.		Mag dip: -68.73 deg.		Other services: Directional Drilling, D&I	
Bore hole record				Casing record					
Hole size	from	to	Size	Density	from	to			
17 1/2 in.	Surface	673 m	13 3/8 in.	54.5 lb/ft	Surface	673 m			
12 1/4 in.	673 m	1891 m	9 5/8 in.	40.0 lb/ft	Surface	1891 m			
8 1/2 in.	1891 m	3617 m							
Type	Mud record		Borehole deviation record						
	from	to	Min	Max	from	to			
KCL/PHPA/Glycol	1900 m	3617 m	36.8 deg.	60.6 deg.	1900.0 m	2416.7 m			
			20.4 deg.	39.2 deg.	2416.7 m	3477.7 m			
			17.0 deg.	20.4 deg.	3477.7 m	3617.0 m			
Surface equipment			Software record						
Unit	OLU-FB-924	IDEAL wis	ID8_1C_01						
Depth system	DES-AB_980	SPM	hspm8_1c_07						
		LWD							
		MWD	V7.0 C00						

<p>Depth is 1900.0 m MD.</p> <p>Mud type is KCL/PHPA/Glycol.</p> <p>POOH for bit change.</p>	<p>At 3500.0m MD, Pull inside Window to Perform Slip & Cut. Run In Hole to Resume Drilling, but BHA got Stuck at 2196.0m MD (1533.0m TVD).</p> <p>Jarring was Performed to Free the BHA.</p> <p>POOH to Inspect the BHA.</p>	<p>Unable to bypass whipstock while RIH. POOH to layout BHA and run Troubleshooting Operations.</p>
Thank You for Choosing Schlumberger.	Thank You for Choosing Schlumberger.	Thank You for Choosing Schlumberger.

EQUIPMENT DESCRIPTION		
RUN1	RUN2	RUN3
<p>DOWNHOLE EQUIPMENT</p> <div> <div> <div>6-3/4 in. PowerPulse*</div> <div>MDC: Y927-AC</div> <div>MEC: 570-BA</div> <div>MDI: 586-BC</div> <div>MGR: 512-AA</div> <div>DH Software: V7.0 C00</div> </div> <div> <div>23.24</div> <div></div> </div> </div> <div> <div>D&I</div> <div>GR</div> <div>18.93</div> <div>18.28</div> </div> <div> <div>6-1/2 in. PMDC</div> <div>S/N: 9612058</div> <div>14.78</div> </div> <div> <div>6-1/2 in. PMDC</div> <div>S/N: ASS15700</div> <div>12.33</div> </div> <div> <div>6-1/2 in. NM Roller Reamer</div> <div>S/N: GU2298</div> <div>Reamer OD: 8-3/8 in.</div> <div>10.66</div> </div>	<p>DOWNHOLE EQUIPMENT</p> <div> <div> <div>6-3/4 in. PowerPulse*</div> <div>MDC: Y927-AC</div> <div>MEC: 570-BA</div> <div>MDI: 586-BC</div> <div>MGR: 512-AA</div> <div>DH Software: V7.0 C00</div> </div> <div> <div>24.84</div> <div></div> </div> </div> <div> <div>D&I</div> <div>GR</div> <div>20.53</div> <div>19.88</div> </div> <div> <div>6-1/2 in. PMDC</div> <div>S/N: 9612058</div> <div>16.38</div> </div> <div> <div>6-1/2 in. PMDC</div> <div>S/N: ASS15700</div> <div>13.93</div> </div> <div> <div>6-5/8 in. NM Roller Reamer</div> <div>S/N: GU2299</div> <div>Reamer OD: 8-3/8 in.</div> <div>12.26</div> </div> <div> <div>6-1/2 in. Float Sub</div> </div>	<p>DOWNHOLE EQUIPMENT</p> <div> <div> <div>6-3/4 in. PowerPulse*</div> <div>MDC: V875-AE</div> <div>MEC: 212-BA</div> <div>MDI: 1096-BC</div> <div>MGR: 503-AA</div> <div>DH Software: V7.0 C00</div> </div> <div> <div>23.17</div> <div></div> </div> </div> <div> <div>D&I</div> <div>GR</div> <div>18.82</div> <div>18.17</div> </div> <div> <div>6-1/2 in. PMDC</div> <div>S/N: 9612058</div> <div>14.79</div> </div> <div> <div>6-1/2 in. PMDC</div> <div>S/N: ASS15700</div> <div>12.34</div> </div> <div> <div>6-5/8 in. NM Roller Reamer</div> <div>S/N: GU2298</div> <div>Reamer OD: 8-3/8 in.</div> <div>10.67</div> </div>

 <p>6-1/2 in. Float Sub S/N: ASQ12141</p> <p>6-3/4 in. PowerPak* Motor A675XP 7:8 / 5.0 S/N: ASQ0002 1.5 deg. Bent Housing 8-3/8 in. Motor Sleeve</p> <p>Smith TCI Bit OD: 8-1/2 in. GFi11YODV S/N: MR4668</p> <p>Maximum string diameter 8.50 in. All lengths in Meters</p>	<p>S/N: ASQ12141</p> <p>8.58 7.93</p> <p>7 in. PowerPak* Motor A700GT 7:8 / 6.8 S/N: N7268 1.0 deg. Bent Housing 8-3/8 in. IB Stabilizer</p> <p>6-5/8 in. NM Rotating Stab. S/N: OSS2832-A Stabilizer OD: 8-1/2 in.</p> <p>REED-Hycalog PDC Bit OD: 8-1/2 in. RSX 163 S/N: 206165</p> <p>Maximum string diameter 8.50 in. All lengths in Meters</p>	<p>10.15 9.50</p> <p>6-1/2 in. Float Sub S/N: ASQ12141</p> <p>6-3/4 in. PowerPak* Motor A675XP 7:8 / 5.0 S/N: ASQ0002 1.15 deg. Bent Housing 8-3/8 in. Motor Sleeve</p> <p>Smith TCI Bit OD: 8-1/2 in. GFi11YODV S/N: MR4669</p> <p>Maximum string diameter 8.50 in. All lengths in Meters</p>
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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.

<p>OTHER SERVICES FOR RUN4</p> <p>Directional Drilling. Directional Surveys.</p>	<p>OTHER SERVICES FOR RUN</p>	<p>OTHER SERVICES FOR RUN</p>
<p>REMARKS: RUN NUMBER 4</p> <p>8-1/2 in. Hole was drilled from 3500.0 m to 3617.0 m MD.</p> <p>Depth is referenced to Driller's Depth.</p> <p>Gamma Ray is corrected for Tool Size, Bit Size and Mud Weight.</p> <p>Mud type is KCL/PHPA/Glycol.</p> <p>POOH due to TD of MLA A22A.</p>	<p>REMARKS: RUN NUMBER</p>	<p>REMARKS: RUN NUMBER</p>

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EQUIPMENT DESCRIPTION

RUN4

RUN

RUN

DOWNHOLE EQUIPMENT

6-3/4 in. PowerPulse*		23.17
MDC: V875-AE		
MEC: 212-BA		
MDI: 1096-BC		
MGR: 503-AA		
DH Software: 7.0 C00		
	D&I	— 18.82
	GR	— 18.17
6-1/2 in. PMDC		14.79
S/N: 9612058		
6-1/2 in. PMDC		12.34
S/N: ASS15700		
6-5/8 in. NM Roller Reamer		10.67
S/N: GU2298		
Reamer OD: 8-3/8 in.		
6-1/2 in. Float Sub		8.59
S/N: ASQ12141		
6.75 in. PowerPak* Motor		7.94
A675XP 7850		

1.15 deg. Bent Housing
8-3/8 in. Motor Sleeve



Smith TCI Bit
OD: 8-1/2 in.
GF11YODV
S/N: MR4669



0.00 0.25

Maximum string diameter 8.50 in.
All lengths in Meters

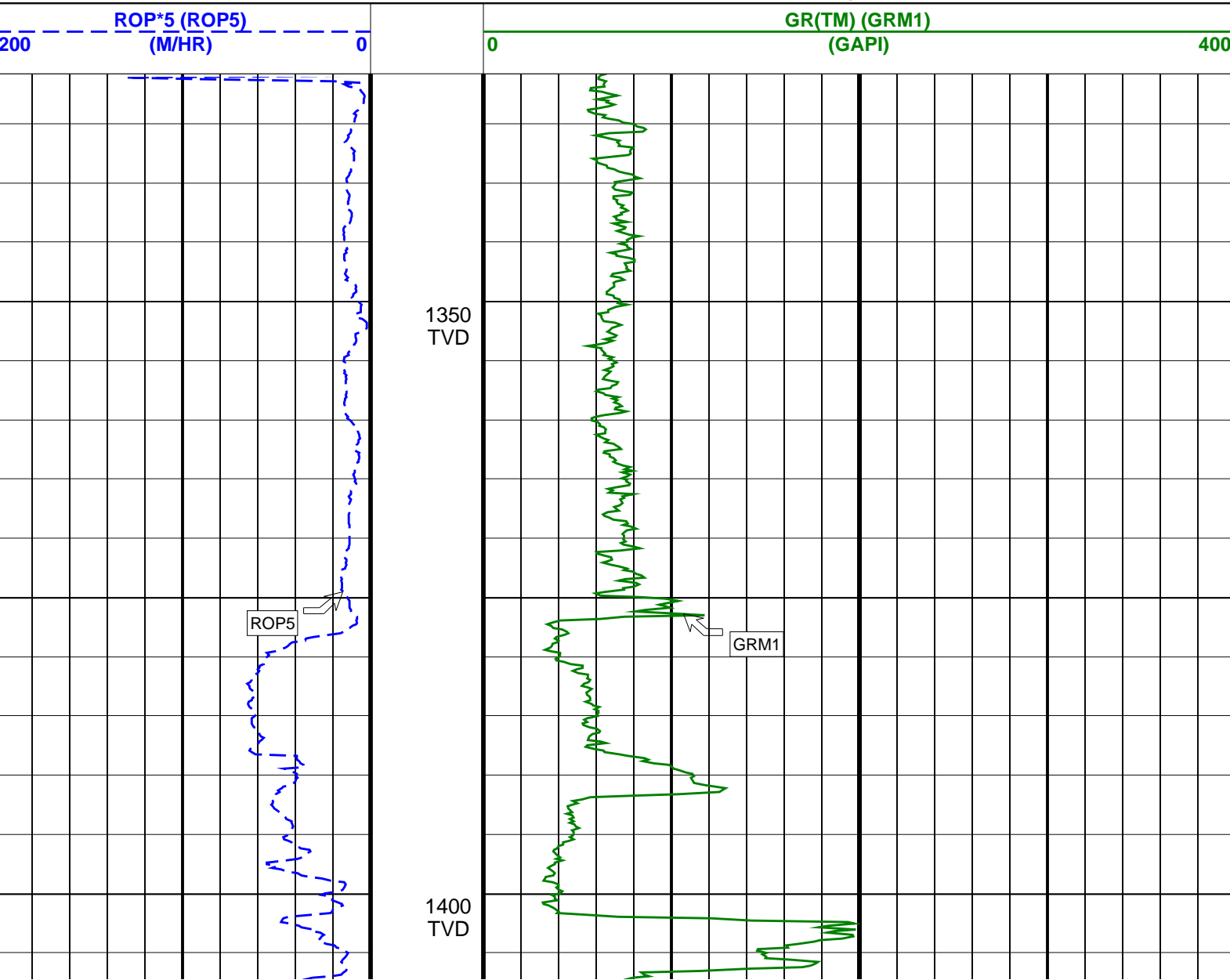
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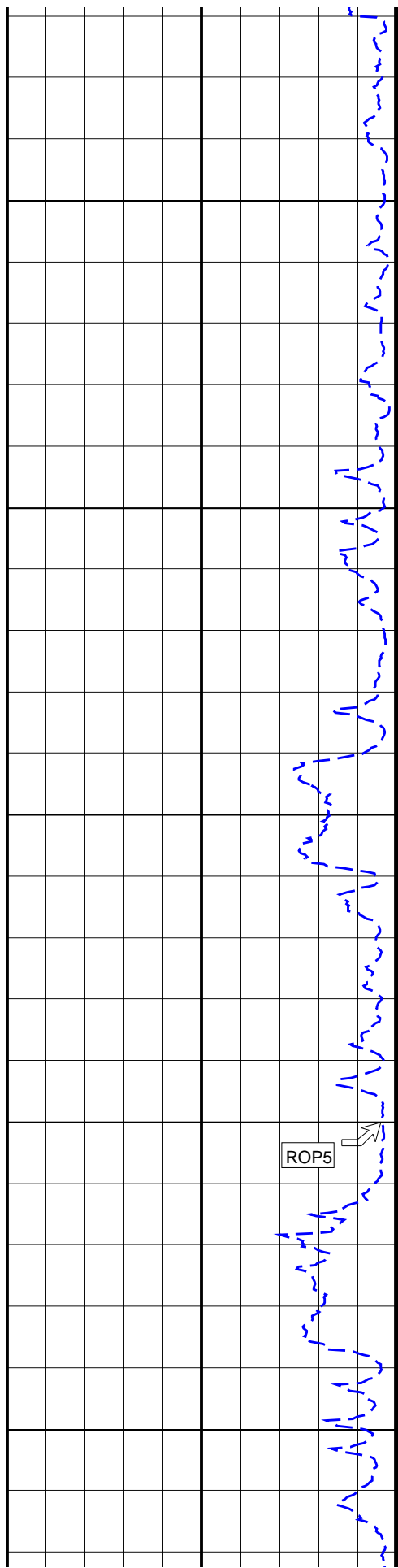
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Temperature											
Mud salinity											
Formation salinity											
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Update rate 2	SEC	n/a	n/a	n/a	n/a						
Filtering GR		3 pt.	3 pt.	3 pt.	3 pt.						
Filtering density		n/a	n/a	n/a	n/a						
Filtering Neutron		n/a	n/a	n/a	n/a						
Company representative		G. Campbell	B. Steel	R. Morris	B. Davis						
Anadrill personnel		K. Handley	L. Muskett	C. Soper	D. Hay						

MLA A22A RT 1:500TVD

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

Graphics File Created: 11-Jun-2004 01:35

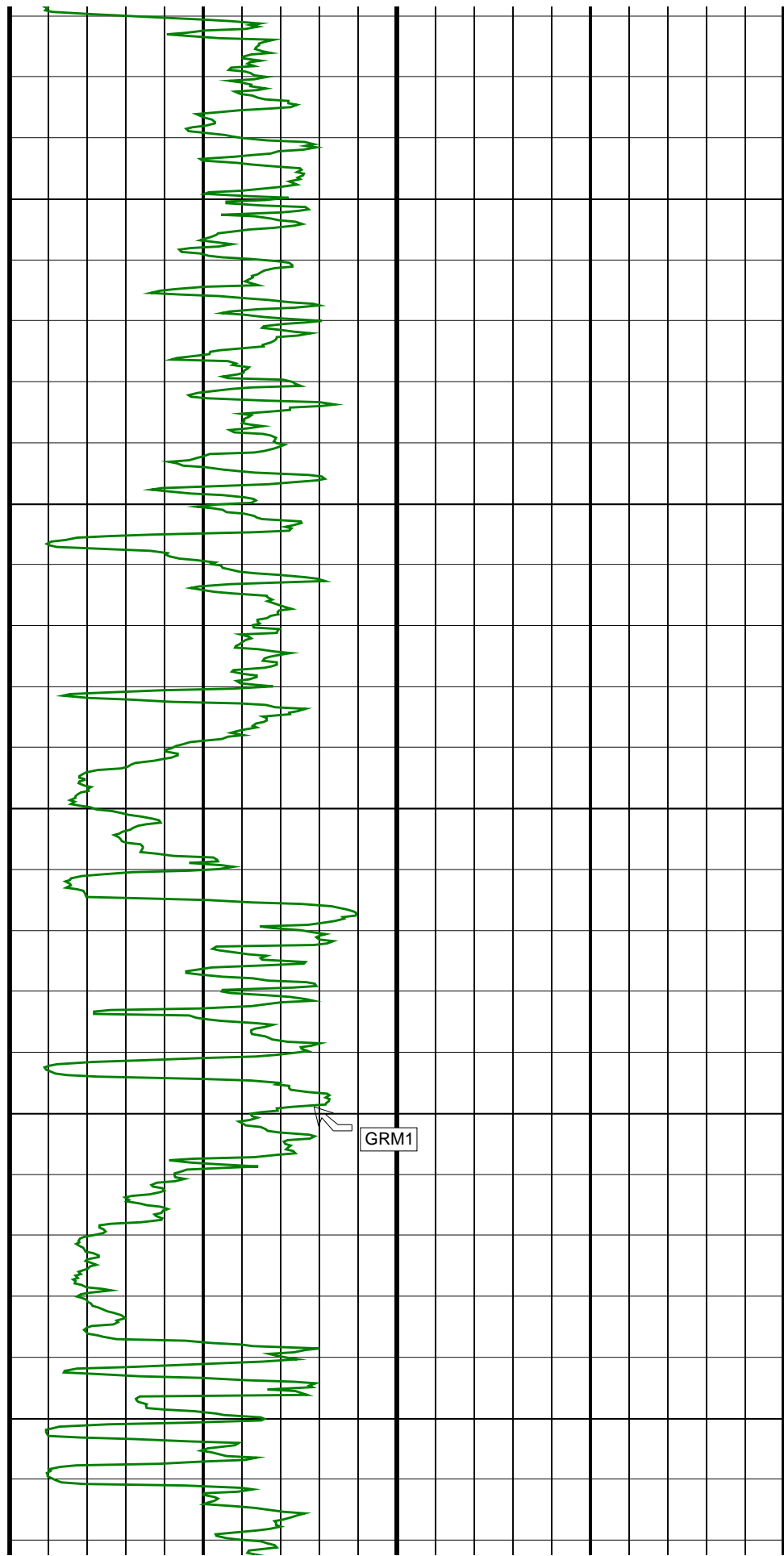


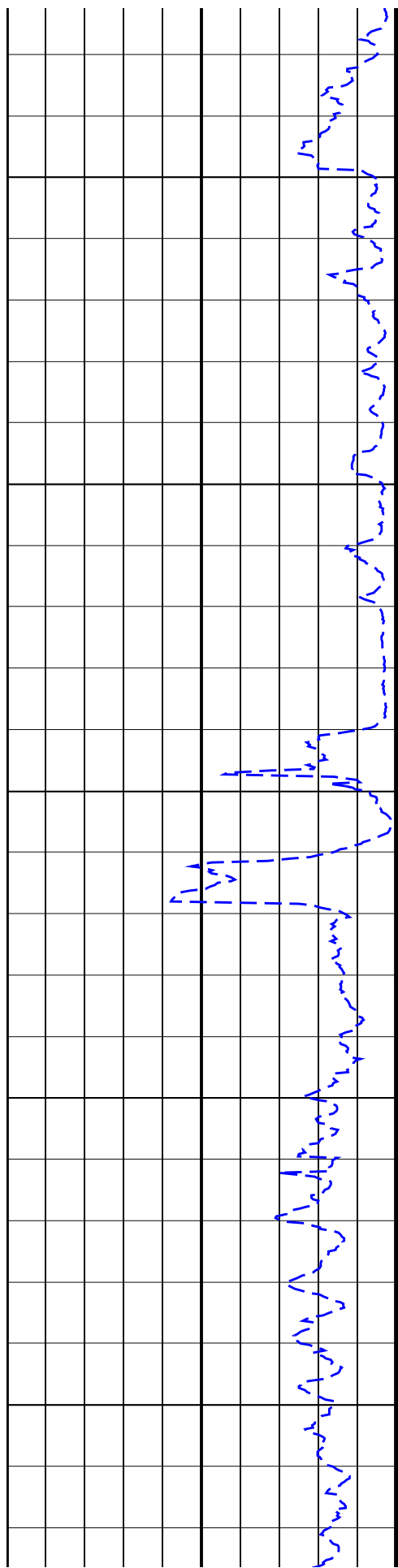


1550
TVD

1600
TVD

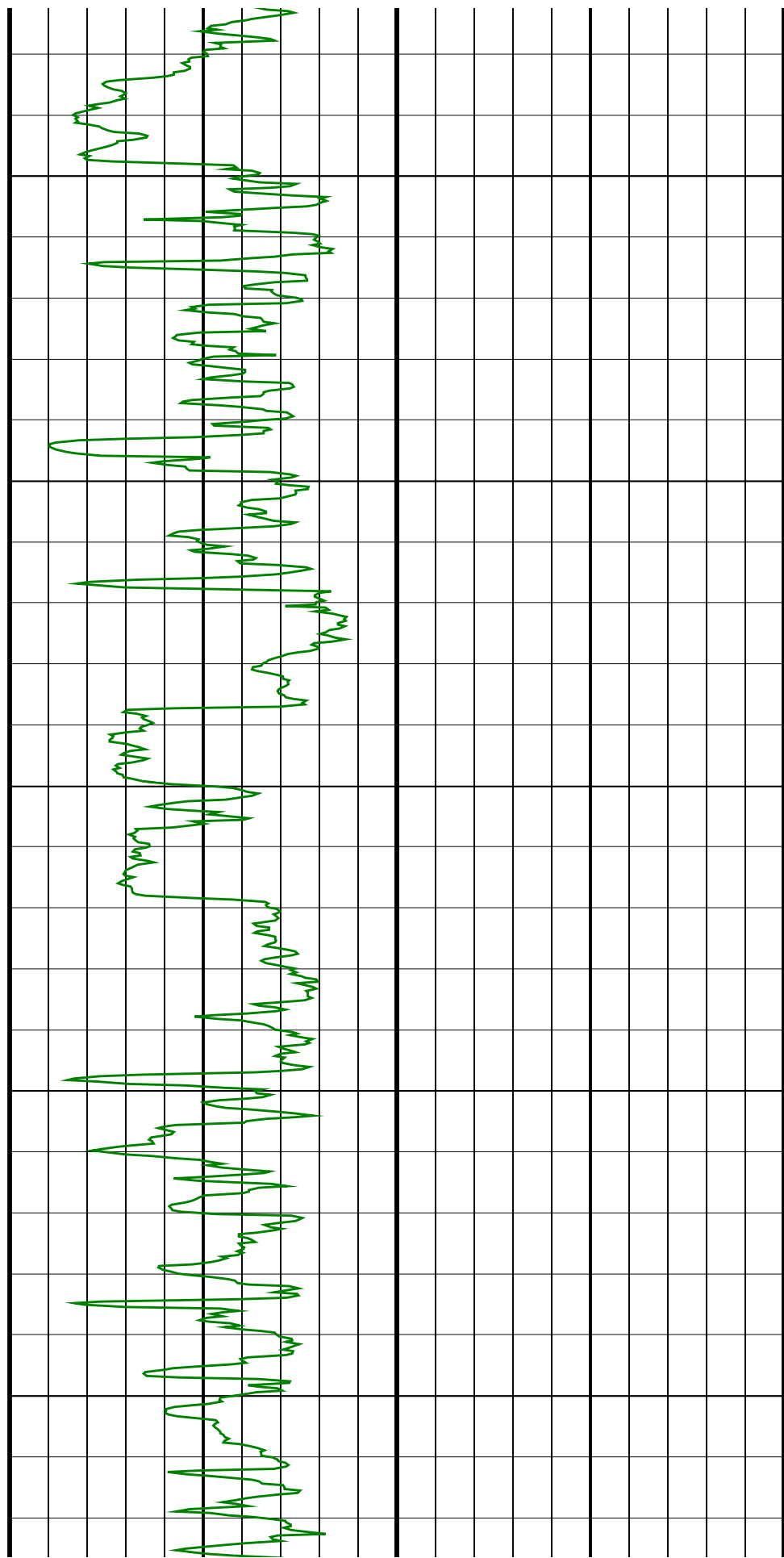
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TVD

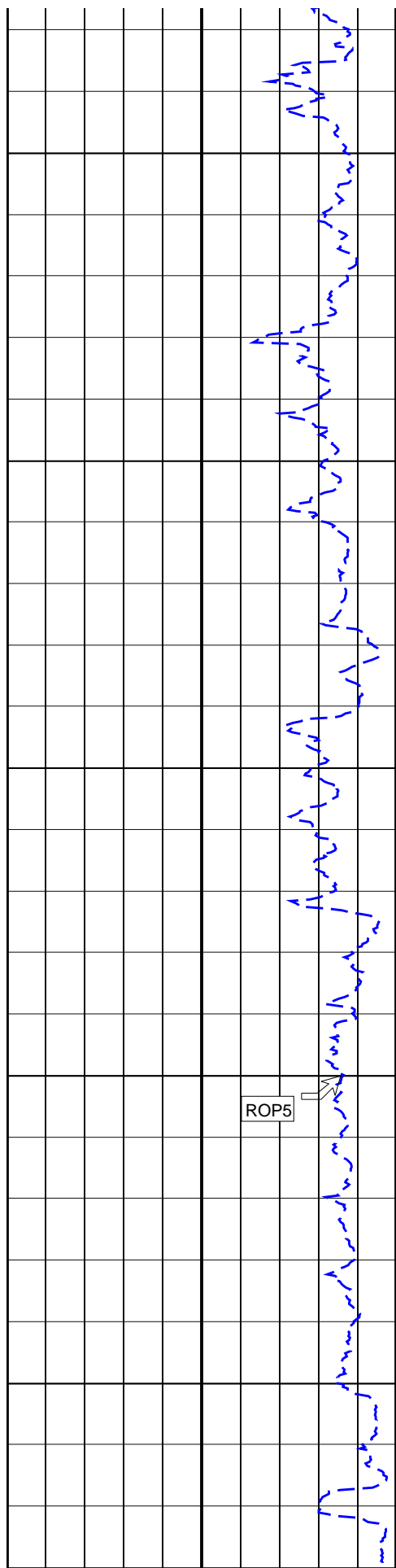




1700
TVD

1750
TVD

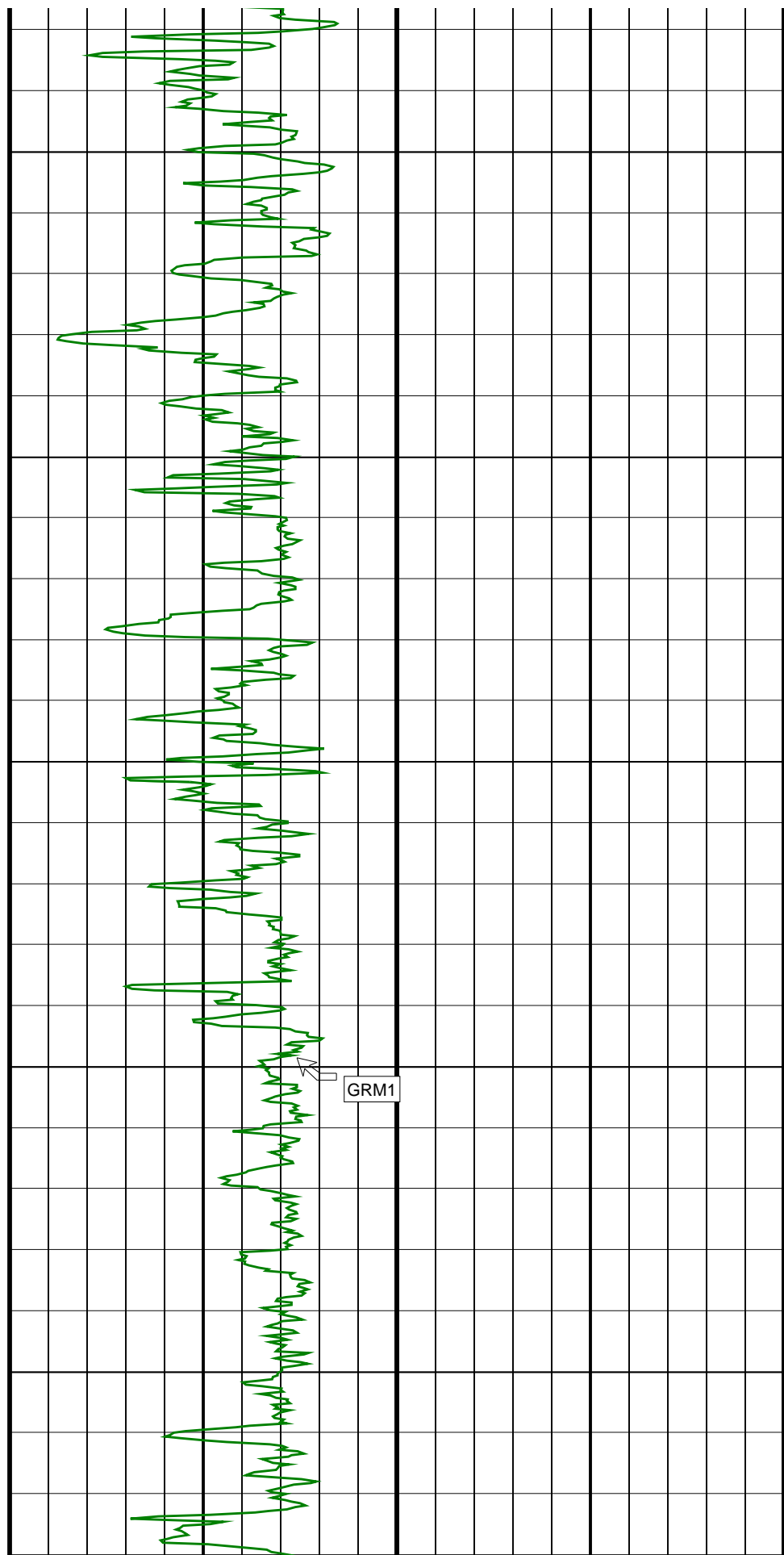


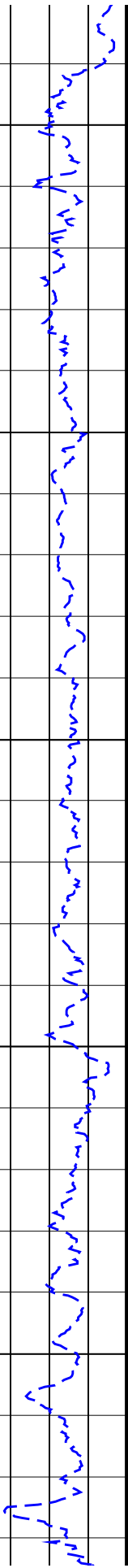


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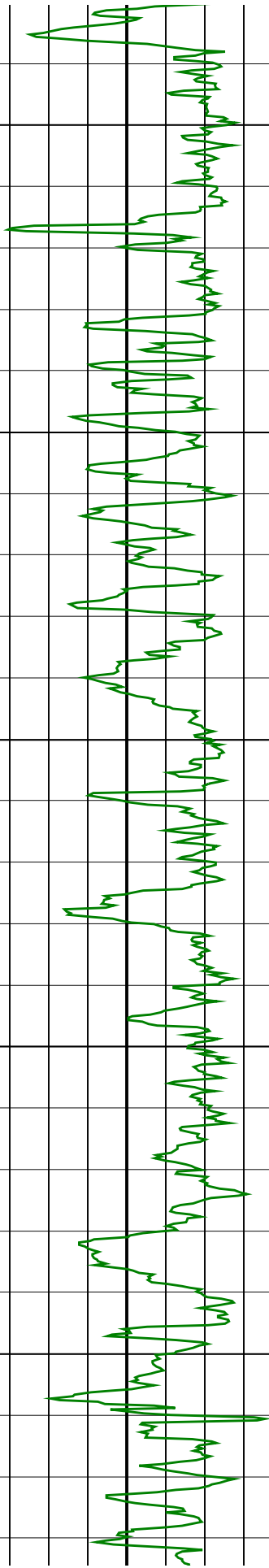
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TVD

1900
TVD

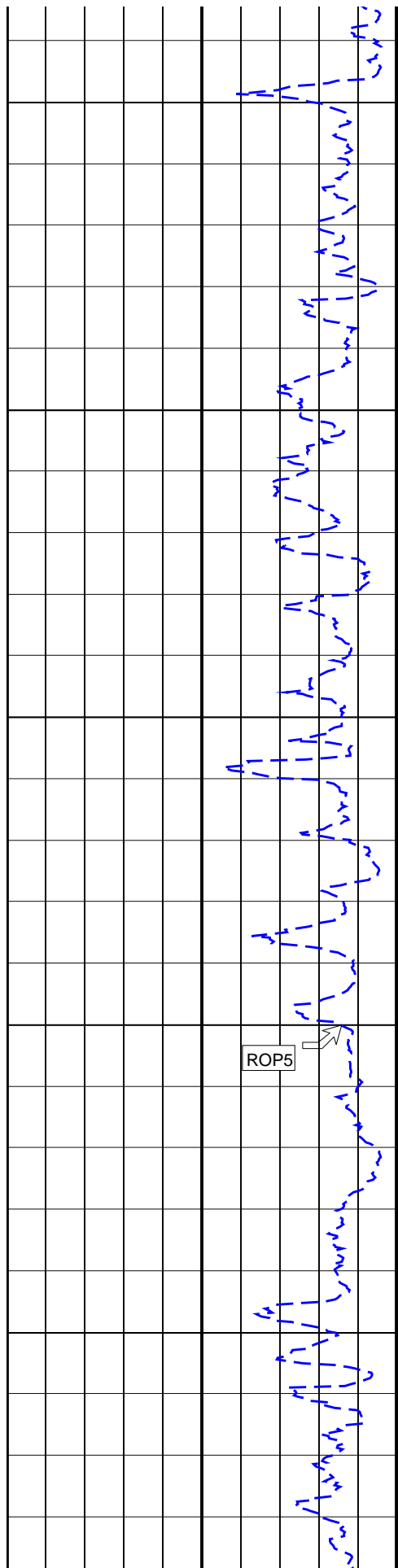




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TVD



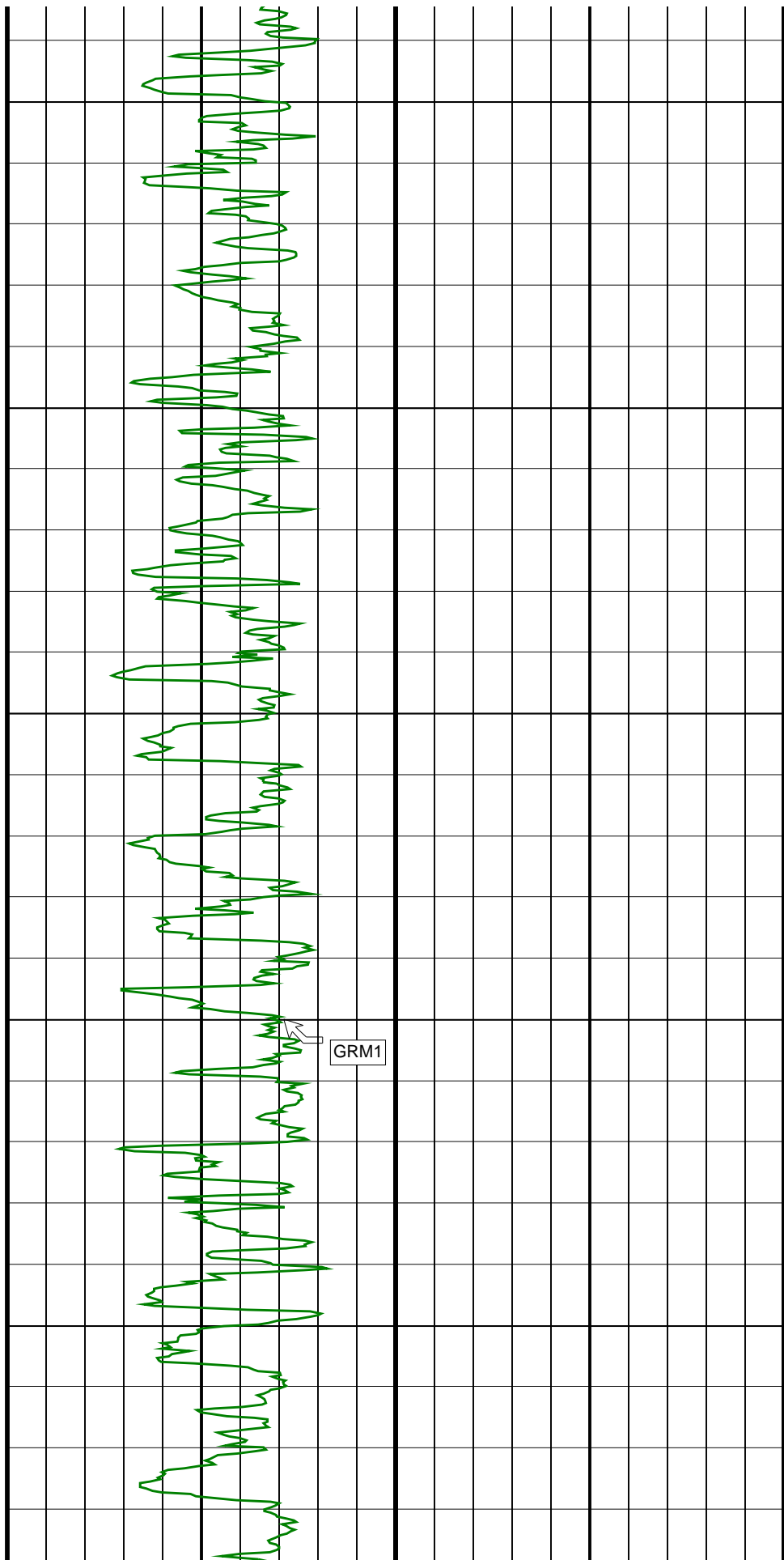
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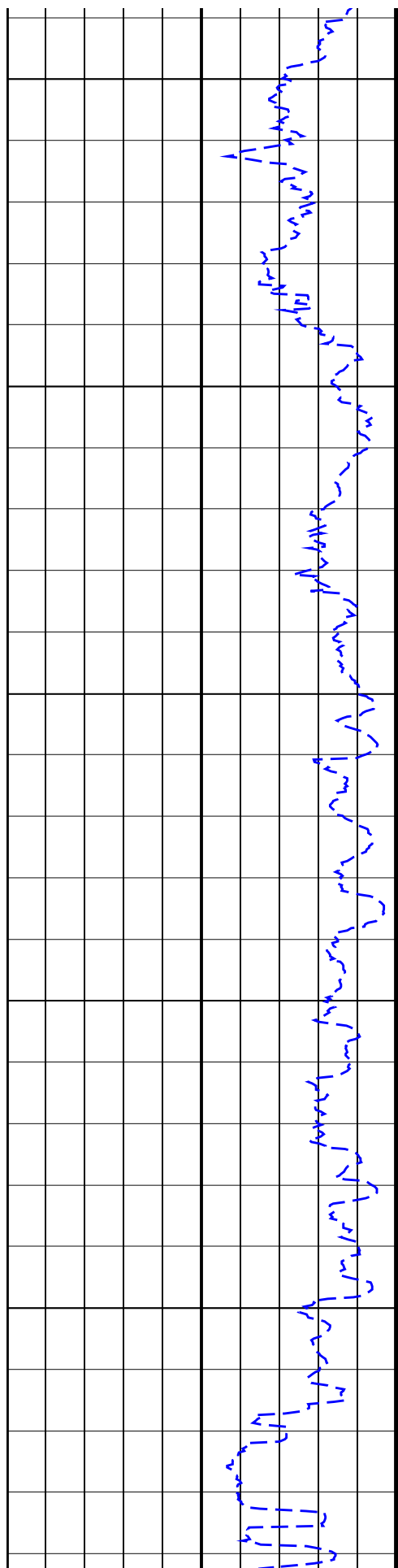


2050
TVD

2100
TVD

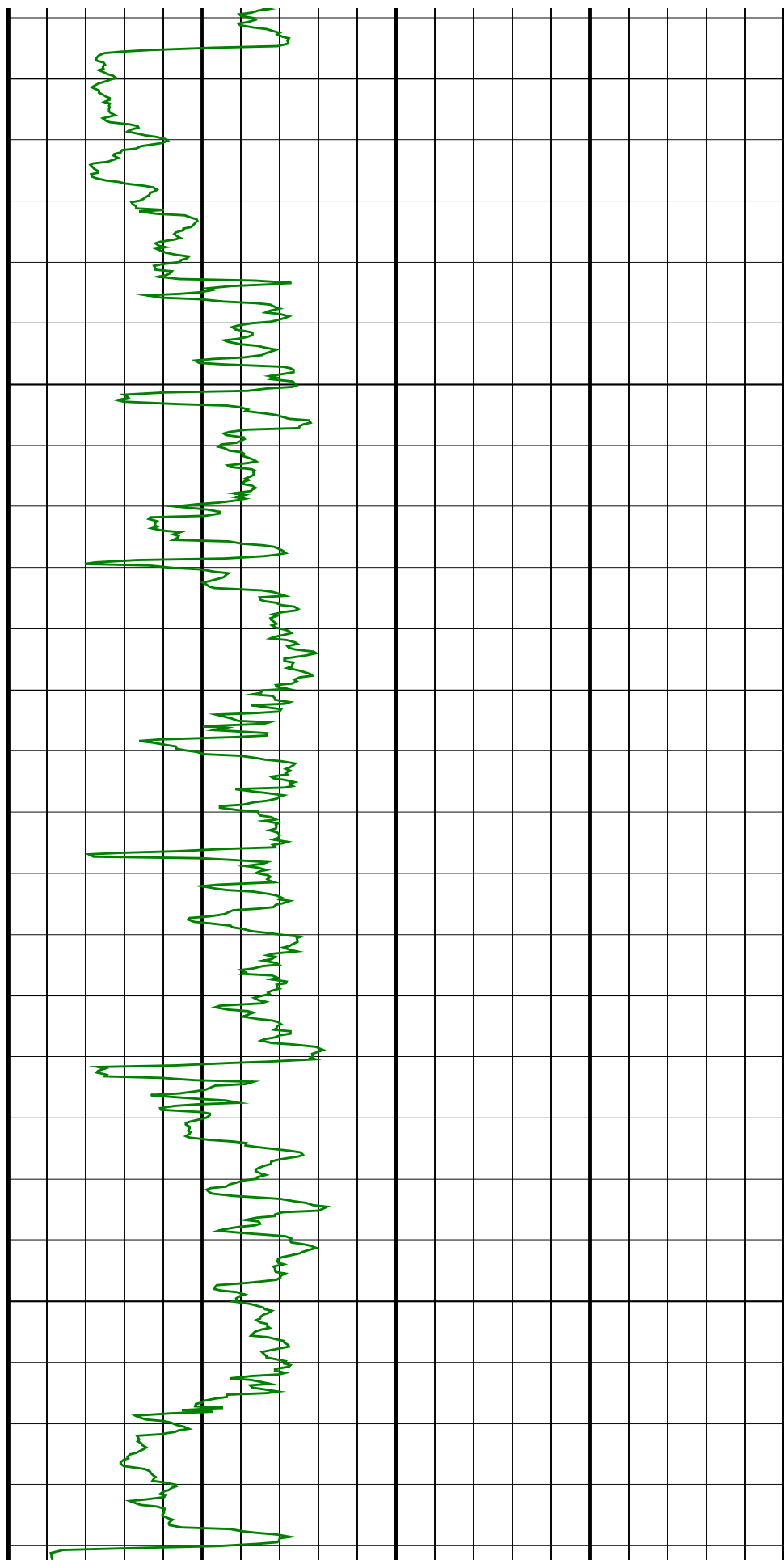
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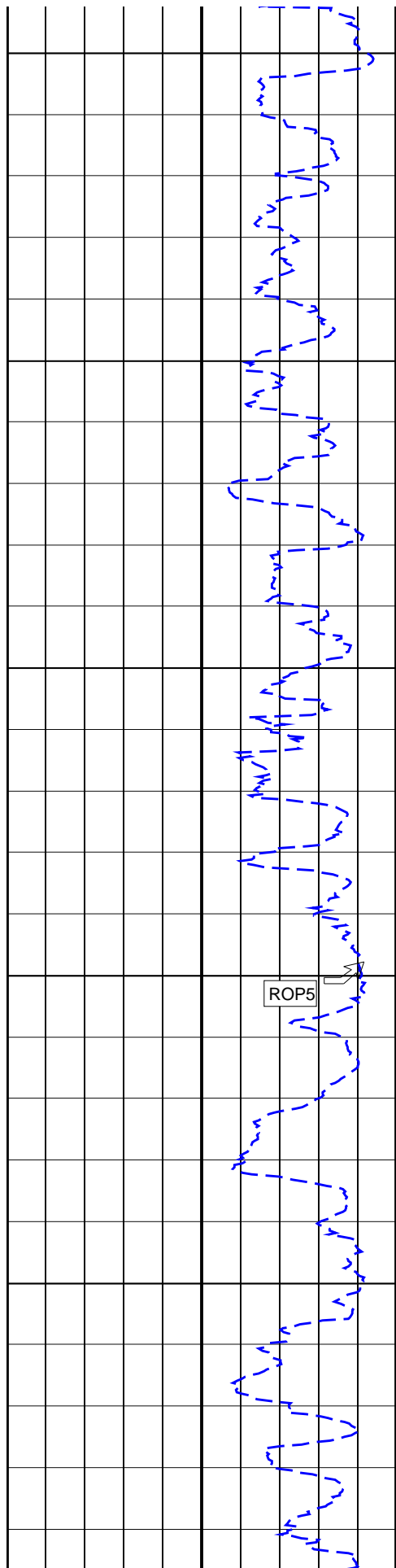




2200
TVD

2250
TVD

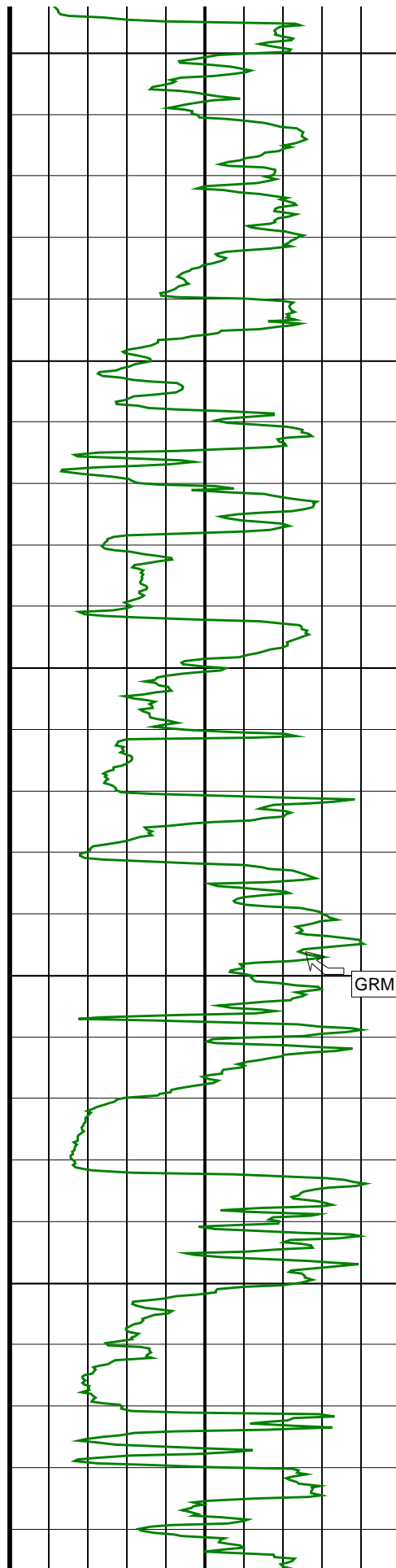


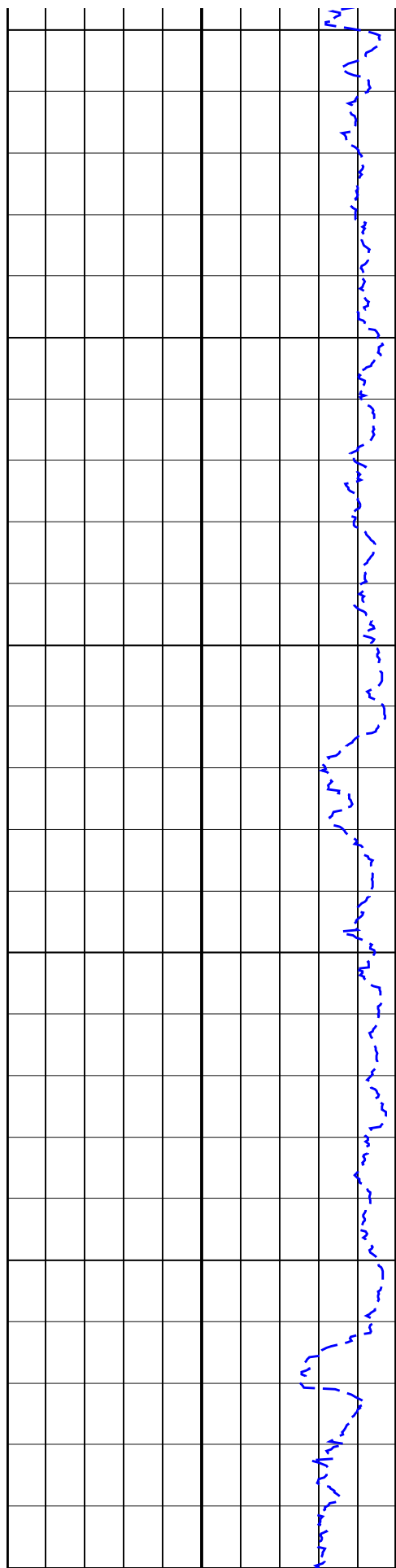


2300
TVD

2350
TVD

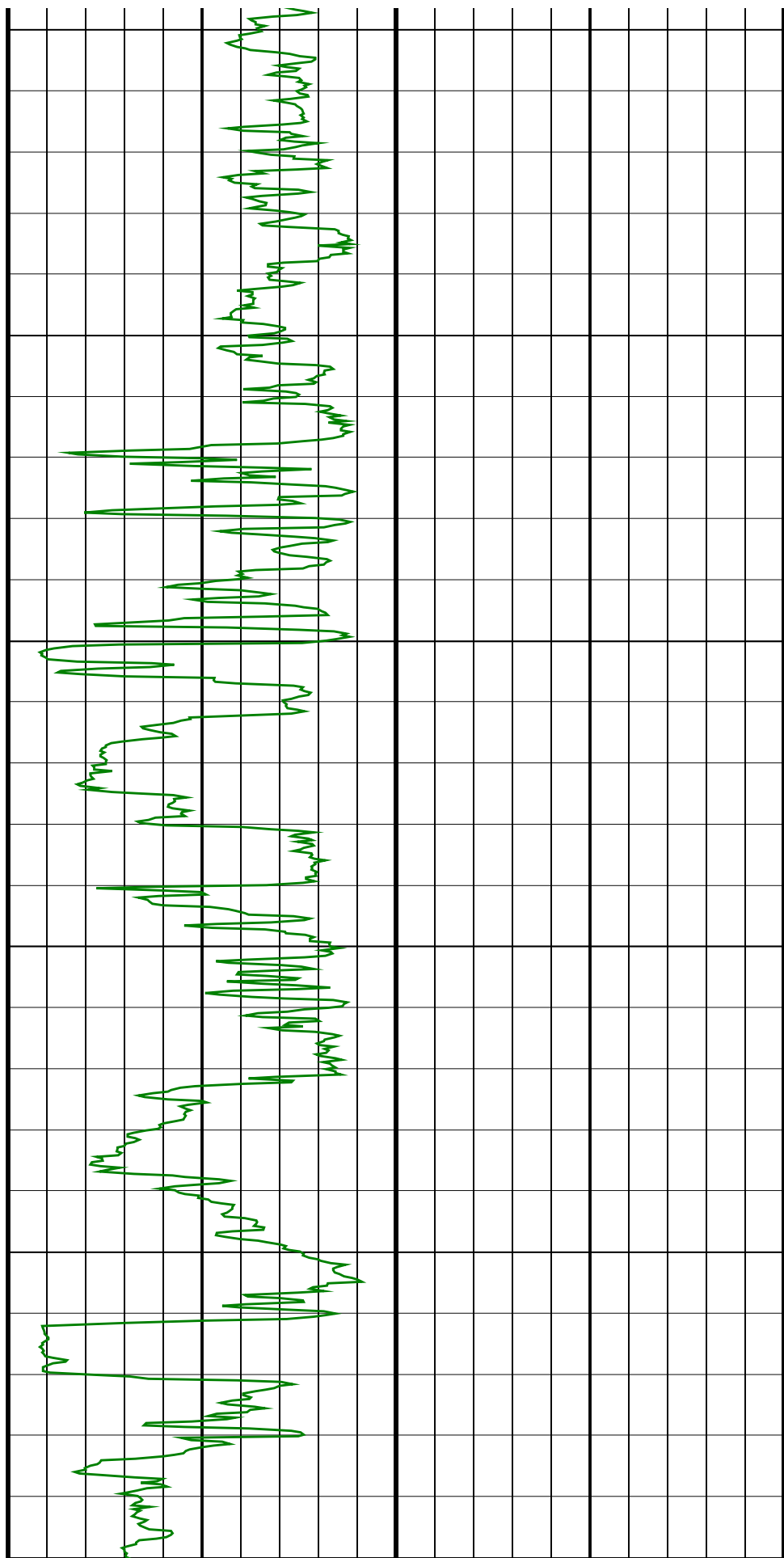
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TVD

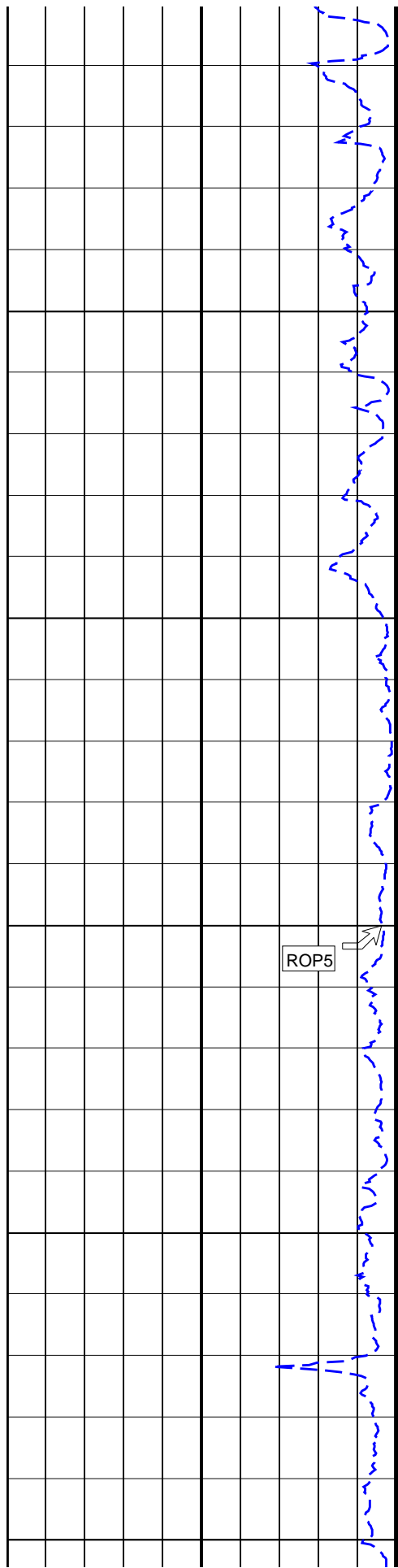




2450
TVD

2500
TVD

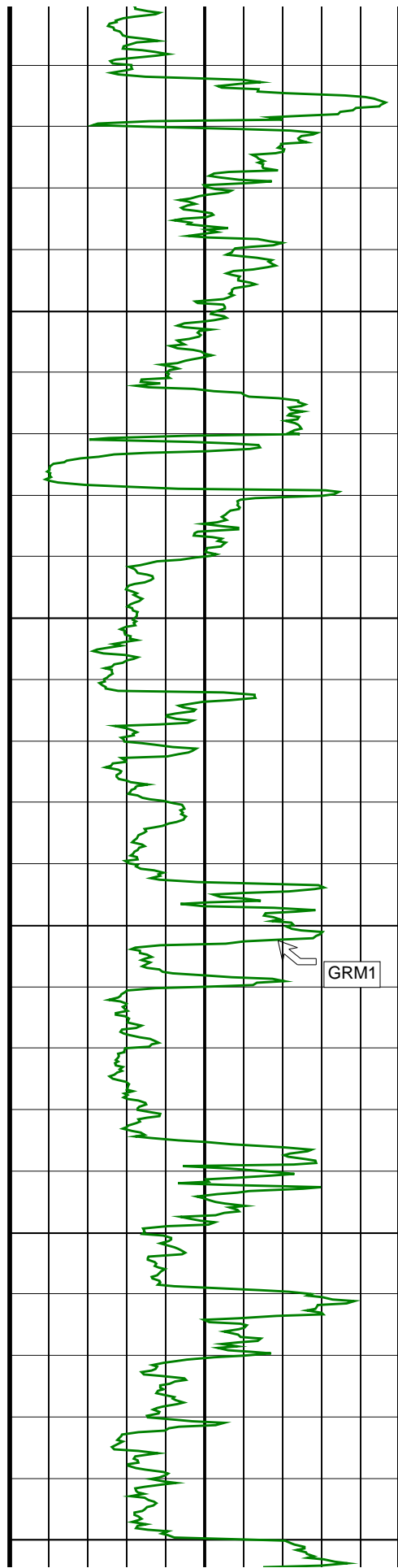


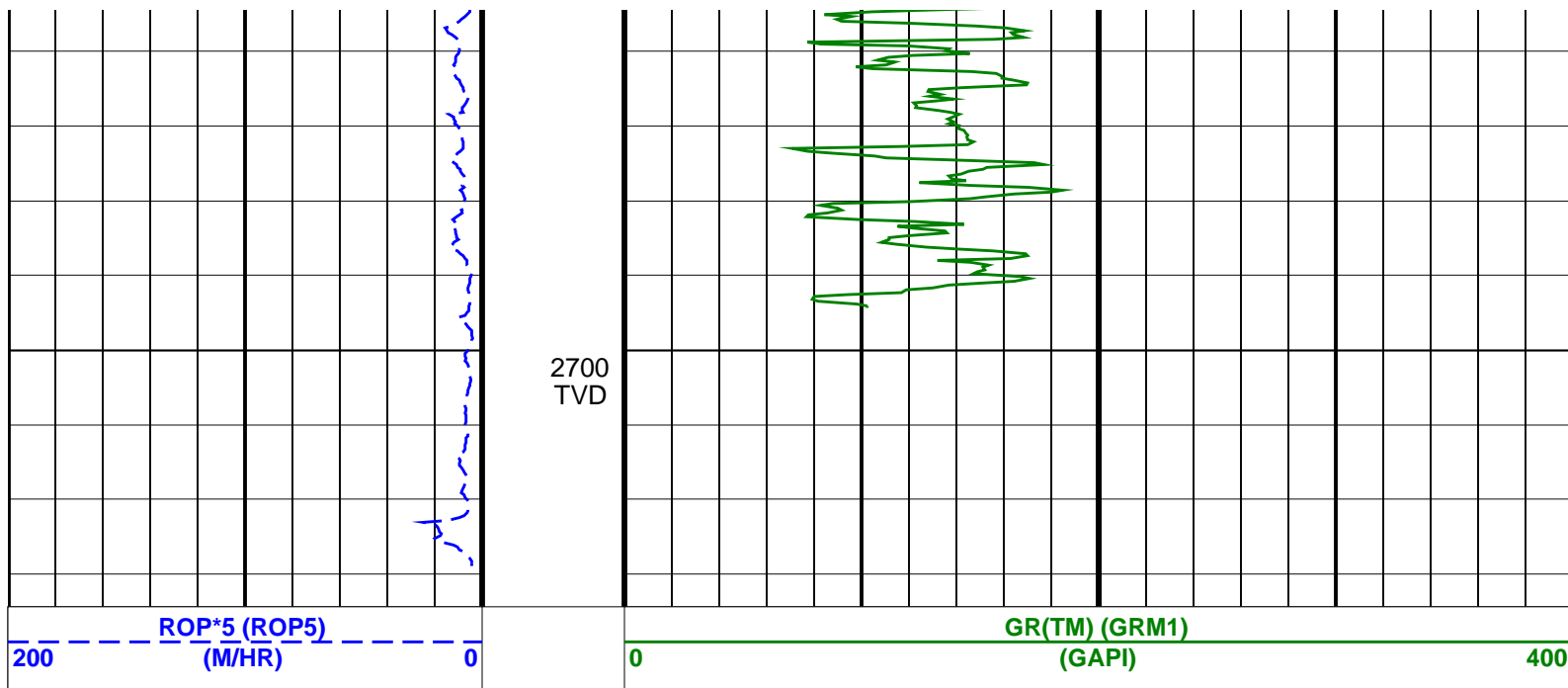


2550
TVD

2600
TVD

2650
TVD





Input DLIS Files

File ID:CDF_MLA-A22A FN:34 11-Jun-2004 01:28

4366.0 FT

8905.0 FT

SCHLUMBERGER

Survey report 10-Jun-2004 22:39:55 Page 1 of 4

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

Well.....: MLA A22A Spud date.....: 24-May-2004
API number.....: Last survey date.....: 10-Jun-04
Engineer.....: Kym Nicholas Handley Total accepted surveys...: 61
MD of first survey.....: 1900.00 m
RIG.....: ISDL 453 MD of last survey.....: 3617.00 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.....: 25-May-2004
Magnetic field strength...: 1199.74 HCNT

----- Depth reference ----- Magnetic dec (+E/W-).....: 13.13 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.....: 1199.74 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-).....: 5767927.00 m Magnetic dec (+E/W-).....: 13.13 degrees
Departure (+E/W-).....: 606841.00 m Grid convergence (+E/W-)..: -0.76 degrees
Total az corr (+E/W-).....: 13.89 degrees
Azimuth from rotary table to target: 215.93 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)	Displ Total (deg)	At Azim (deg)	DLS (deg)	Srvy Tool	Tool Corr
1	1900.00	60.55	200.38	0.00	1330.76	1066.41	-1100.23	-299.11	1140.16	195.21	0.00	TIP	None
2	1930.23	52.83	211.29	30.23	1347.38	1091.19	-1122.94	-309.99	1164.94	195.43	12.03	MWD	None
3	1936.70	51.80	212.54	6.47	1351.34	1096.29	-1127.29	-312.69	1169.85	195.50	6.73	GYR	None
4	1987.88	49.70	217.36	51.18	1383.73	1135.90	-1159.77	-335.37	1207.28	196.13	2.55	MWD	None
5	2015.71	49.85	217.11	27.83	1401.70	1157.14	-1176.69	-348.22	1227.13	196.49	0.27	MWD	None
6	2044.93	48.19	217.99	29.22	1420.86	1179.19	-1194.18	-361.66	1247.74	196.85	1.87	MWD	None
7	2073.54	45.40	220.16	28.61	1440.45	1200.01	-1210.37	-374.80	1267.07	197.21	3.42	MWD	None
8	2102.09	43.17	222.26	28.55	1460.89	1219.86	-1225.37	-387.93	1285.31	197.57	2.85	MWD	None
9	2130.99	40.83	227.28	28.90	1482.37	1238.95	-1239.10	-401.52	1302.53	197.95	4.32	MWD	None
10	2159.23	38.43	231.39	28.24	1504.12	1256.47	-1250.84	-415.16	1317.94	198.36	3.84	MWD	None
11	2187.94	37.96	233.27	28.71	1526.69	1273.50	-1261.69	-429.21	1332.70	198.79	1.33	MWD	None
12	2216.45	38.64	237.67	28.51	1549.06	1290.14	-1271.70	-443.77	1346.90	199.24	3.00	MWD	None
13	2245.23	38.52	238.91	28.78	1571.56	1306.74	-1281.13	-459.03	1360.89	199.71	0.83	MWD	None
14	2273.85	38.39	239.69	28.62	1593.98	1323.07	-1290.22	-474.34	1374.65	200.19	0.53	MWD	None
15	2302.70	37.97	240.56	28.85	1616.65	1339.34	-1299.10	-489.80	1388.37	200.66	0.72	MWD	None
16	2331.40	38.06	241.27	28.70	1639.27	1355.36	-1307.69	-505.25	1401.90	201.12	0.47	MWD	None
17	2360.15	37.90	239.82	28.75	1661.93	1371.44	-1316.39	-520.65	1415.61	201.58	0.96	MWD	None
18	2388.95	37.46	239.88	28.80	1684.72	1387.54	-1325.23	-535.87	1429.48	202.02	0.47	MWD	None
19	2416.70	36.76	240.80	27.75	1706.85	1402.78	-1333.52	-550.42	1442.65	202.43	0.98	MWD	None
20	2445.36	37.82	239.61	28.66	1729.65	1418.61	-1342.15	-565.49	1456.41	202.85	1.36	MWD	None
21	2474.22	37.64	239.58	28.86	1752.48	1434.79	-1351.09	-580.72	1470.60	203.26	0.19	MWD	None
22	2503.13	37.64	239.13	28.91	1775.37	1450.99	-1360.09	-595.91	1484.91	203.66	0.29	MWD	None
23	2531.94	37.11	238.98	28.81	1798.27	1467.07	-1369.08	-610.91	1499.20	204.05	0.57	MWD	None
24	2560.43	36.27	238.97	28.49	1821.11	1482.73	-1377.85	-625.50	1513.18	204.42	0.90	MWD	None
25	2589.08	36.85	239.20	28.65	1844.12	1498.42	-1386.62	-640.14	1527.25	204.78	0.63	MWD	None
26	2617.52	37.93	239.18	28.44	1866.72	1514.29	-1395.47	-654.97	1541.53	205.14	1.16	MWD	None
27	2646.36	37.60	238.86	28.84	1889.52	1530.54	-1404.56	-670.11	1556.22	205.51	0.41	MWD	None
28	2675.08	38.76	239.63	28.72	1912.09	1546.84	-1413.63	-685.37	1571.02	205.87	1.33	MWD	None
29	2703.94	39.21	239.87	28.86	1934.53	1563.45	-1422.78	-701.05	1586.12	206.23	0.50	MWD	None
30	2732.51	38.62	239.80	28.57	1956.76	1579.86	-1431.80	-716.57	1601.10	206.59	0.63	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)	Displ Total (deg)	At Azim (deg)	DLS (deg)	Srvy Tool	Tool Corr
31	2761.23	38.26	239.86	28.72	1979.25	1596.18	-1440.77	-732.01	1616.06	206.93	0.38	MWD	None
32	2789.70	37.87	240.21	28.47	2001.67	1612.20	-1449.54	-747.21	1630.79	207.27	0.48	MWD	None
33	2818.26	37.74	240.45	28.56	2024.23	1628.15	-1458.20	-762.42	1645.49	207.60	0.21	MWD	None
34	2847.05	37.96	240.04	28.79	2046.96	1644.24	-1466.97	-777.76	1660.40	207.93	0.35	MWD	None
35	2875.73	37.60	240.22	28.68	2069.63	1660.27	-1475.72	-793.00	1675.29	208.25	0.40	MWD	None
36	2904.44	37.24	240.17	28.71	2092.43	1676.18	-1484.39	-808.13	1690.12	208.56	0.38	MWD	None
37	2932.71	36.78	239.90	28.27	2115.01	1691.71	-1492.89	-822.88	1704.66	208.86	0.53	MWD	None
38	2961.62	36.54	239.37	28.91	2138.20	1707.51	-1501.62	-837.77	1719.51	209.16	0.42	MWD	None
39	2990.25	36.70	239.34	28.63	2161.18	1723.18	-1510.32	-852.46	1734.29	209.44	0.17	MWD	None
40	3019.50	36.24	239.56	29.25	2184.70	1739.12	-1519.16	-867.44	1749.37	209.73	0.50	MWD	None
41	3048.05	35.87	239.87	28.55	2207.78	1754.50	-1527.63	-881.95	1763.94	210.00	0.44	MWD	None
42	3076.53	34.95	239.44	28.48	2230.99	1769.61	-1535.97	-896.19	1778.30	210.26	1.02	MWD	None
43	3105.29	34.28	239.94	28.76	2254.66	1784.56	-1544.22	-910.29	1792.55	210.52	0.77	MWD	None
44	3133.80	33.47	240.12	28.51	2278.33	1799.07	-1552.16	-924.06	1806.40	210.77	0.87	MWD	None
45	3162.74	33.21	239.82	28.94	2302.51	1813.59	-1560.11	-937.83	1820.30	211.01	0.32	MWD	None
46	3191.46	31.81	239.57	28.72	2326.73	1827.72	-1567.90	-951.15	1833.85	211.24	1.49	MWD	None
47	3219.71	30.67	238.89	28.25	2350.88	1841.17	-1575.40	-963.74	1846.80	211.46	1.29	MWD	None
48	3248.22	29.49	238.69	28.51	2375.55	1854.34	-1582.80	-975.96	1859.51	211.66	1.27	MWD	None
49	3277.07	28.75	238.21	28.85	2400.76	1867.31	-1590.15	-987.93	1872.05	211.85	0.82	MWD	None
50	3306.00	28.14	238.44	28.93	2426.19	1880.05	-1597.38	-999.65	1884.39	212.04	0.65	MWD	None
51	3334.70	26.79	238.86	28.70	2451.66	1892.26	-1604.27	-1010.96	1896.24	212.22	1.45	MWD	None
52	3363.41	25.74	239.37	28.71	2477.40	1903.94	-1610.79	-1021.86	1907.58	212.39	1.14	MWD	None
53	3392.17	24.49	240.28	28.76	2503.44	1915.10	-1616.93	-1032.41	1918.42	212.56	1.39	MWD	None
54	3420.72	22.92	240.55	28.55	2529.58	1925.54	-1622.60	-1042.39	1928.57	212.72	1.68	MWD	None
55	3449.22	21.66	241.28	28.50	2555.95	1935.34	-1627.85	-1051.84	1938.11	212.87	1.38	MWD	None
56	3477.72	20.41	241.48	28.50	2582.55	1944.58	-1632.75	-1060.82	1947.10	213.01	1.34	MWD	None
57	3507.52	19.99	241.57	29.80	2610.52	1953.86	-1637.66	-1069.86	1956.15	213.16	0.43	MWD	None

58	3535.90	20.01	241.39	28.38	2637.19	1962.62	-1642.29	-1078.39	1964.70	213.29	0.07	MWD	None
59	3564.39	19.41	242.05	28.49	2664.01	1971.27	-1646.85	-1086.85	1973.16	213.42	0.68	MWD	None
60	3593.49	18.05	242.73	29.10	2691.57	1979.64	-1651.18	-1095.13	1981.34	213.55	1.44	MWD	None

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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 (deg)	At Azim (deg)	DLS (deg)	Srvy tool	Tool Corr
61	3617.00	16.95	243.31	23.51	2713.99	1985.93	-1654.39	-1101.43	1987.50	213.65	1.44	Projection to TD	

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

Schlumberger

Well: **MLA A22A**

Field: **Turrum**

Rig: **ISDL 453**

State: **Victoria**

**PowerPulse – Gamma Ray
1:500 True Vertical Depth
Real Time Log**