

Thank You for Choosing Schlumberger

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EQUIPMENT DESCRIPTION

RUN1

RUN2

RUN3

DOWNHOLE EQUIPMENT

DOWNHOLE EQUIPMENT

DOWNHOLE EQUIPMENT

6-3/4 in. PowerPulse* 23.72
MDC: Z408-AC
MEC: 1540-BB
MDI: 1556-CA
MGR: 146-AA
DHS: V7.0C00

D&I 19.42
GR 18.77



6-5/8 in. NM Pony 15.27
S/N: ASS15700



8-3/8 in. NM Roller Reamer 13.71
S/N: GU2317R



6-7/16 in. NM Pony 11.62
S/N: 9612058



7 in. PowerPak* Motor 9.16
A700GT 7:8
S/N: 07062
1.5 deg. Bent Housing
8-3/8 in. Motor Sleeve



6-3/4 in. PowerPulse* 21.91
MDC: Z408-AC
MEC: 1540-BB
MDI: 1556-CA
MGR: 146-AA
DHS: V7.0C00

D&I 17.61
GR 16.96



8-3/8 in. NM Roller Reamer 13.46
S/N: GU2317R



6-5/8 in. NM Drill Collar 11.37
S/N: M364



6-3/4 in. PowerPulse* 23.75
MDC: Z408-AC
MEC: 1540-BB
MDI: 1556-CA
MGR: 146-AA
DHS: V7.0C00

D&I 19.45
GR 18.80



6-5/8 in. NM Pony 15.30
S/N: ASS15700



6-7/16 in. NM Pony 13.74
S/N: 9612058




8-3/8 in. NM Roller Reamer 11.29
S/N: GU2317R



7in. PowerPak* Motor 9.20
A700GT 7:8
S/N N7268
1.15 deg. Bent Housing
8-3/8 in. Motor Sleeve






Smith PDC Bit
OD: 8–1/2 in.
S73PX S/N: JT0016


0.00 0.22

Maximum string diameter 8.50 in.
All lengths in Meters



8–1/4 in. NB Stabilizer
S/N: DOTS3231


2.10



Smith Insert Bit
OD: 8–1/2 in.
GUI11 YODVPD S/N: MR6363

0.00 0.25

Maximum string diameter 8.50 in.
All lengths in Meters



Reed-Hycalog PDC Bit
OD: 8–1/2 in.
RSX163 S/N: 207785

0.00 0.22

Maximum string diameter 8.50 in.
All lengths in Meters

Bit Run Summary

Run number		1	2	3						
Bit size	in	8.5	8.5	8.5						
Bit start depth	m	829.0	3048.0	3101.0						
Bit end depth	m	3048.0	3101.0	3406.0						
Top interval logged	m	829.0	3029.2	3084.0						
Bottom interval logged	m	3029.2	3084.0	3387.2						
Begin log: time		22:42	10:30	20:08						
Begin log: date		31-Dec-04	11-Jan-05	13-Jan-05						
End log: time		09:38	17:45	20:08						
End log: date		08-Jan-05	12-Jan-05	14-Jan-05						
Mud data										
Depth	m	3048.0	3101.0	3397.0						
Type		KCI/PHPA/Gly.	KCI/PHPA/Gly.	KCI/PHPA/Gly.						
Mud weight	ppg	10.05	10.25	10.15						
Solids	%	8.1	9.2	9.6						
Chlorides	mg/L	40,400	39,000	32,000						
Rm	OHHM@°C	N/A	N/A	N/A						
Rmf	OHHM@°C	N/A	N/A	N/A						
Rmc	OHHM@°C	N/A	N/A	N/A						
Potassium	%	3.877	3.896	3.522						
Environmental data										
GR										
Mud weight	ppg	10.05	10.25	10.15						
Bit size	in	8.5	8.5	8.5						
Resistivity										
Neutron porosity										
Hole Size										
Mud weight										
Temperature										
Mud salinity										
Formation salinity										
Recording rate 1	SEC	4.36	4.36	4.36						
Recording rate 2	SEC	N/A	N/A	N/A						
Filtering GR		3 pt	3 pt	3 pt						
Filtering density										
Filtering Neutron										
Company representative		T. Bassett	B. Davis	B. Steel						
Anadrill personnel		A. De Castro	D. Hastie	C. Cocks	T. Auger					

TNA A31A RT 1:500TVD

IDEAL Version: ID9_1C_01 <TVD> Vertical Scale: 1:500 Graphics File Created: 15-Jan-2005 04:07

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(M/HR)

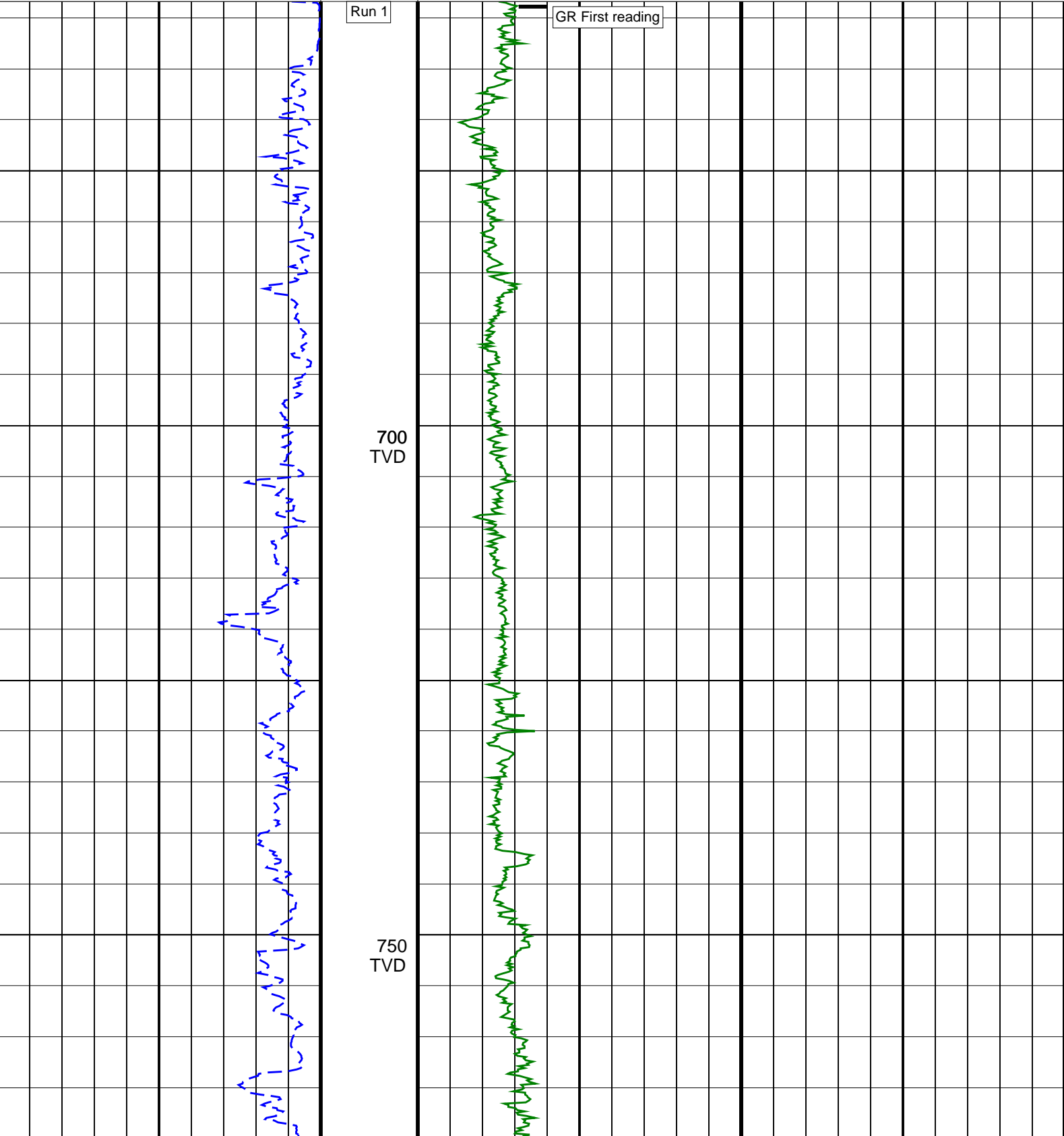
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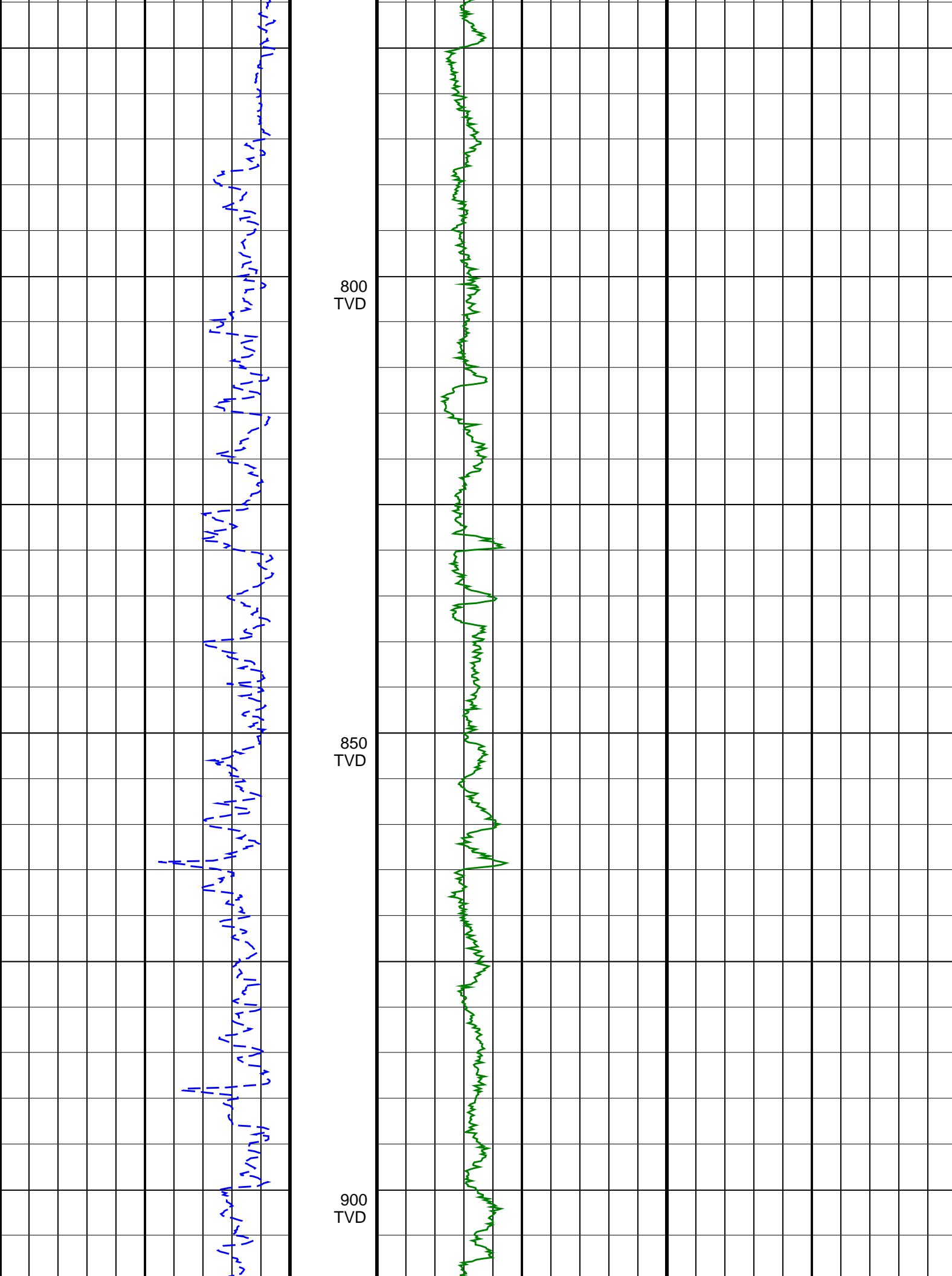
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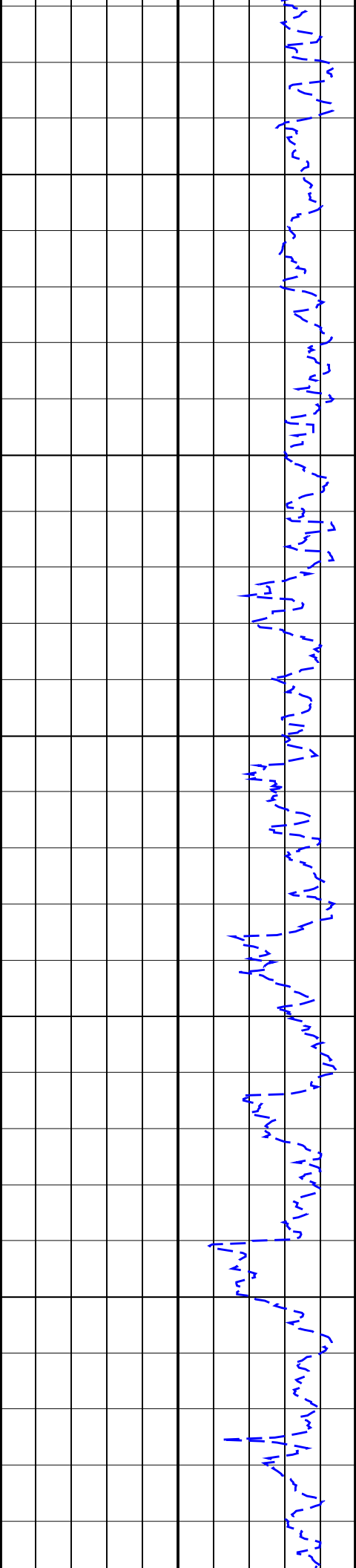
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(GAPI)

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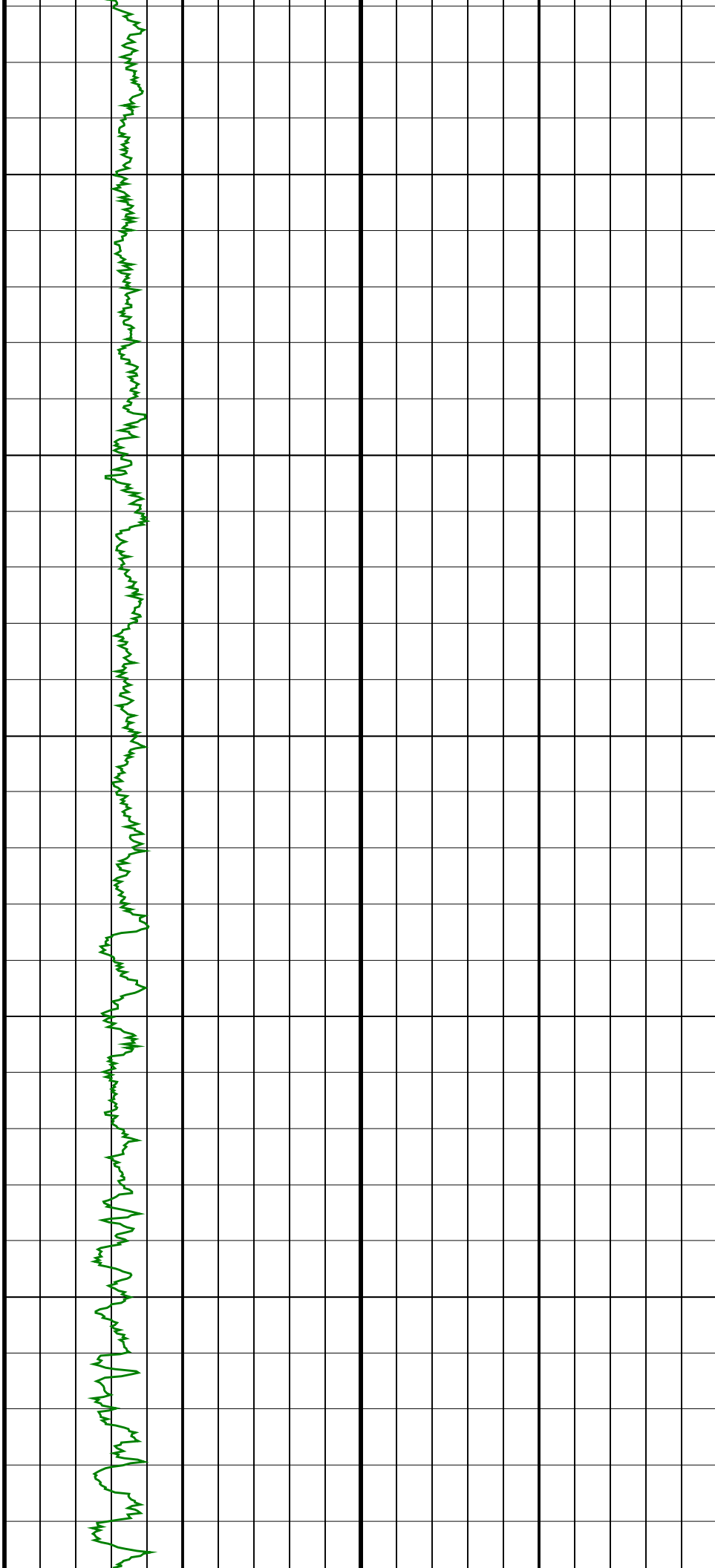


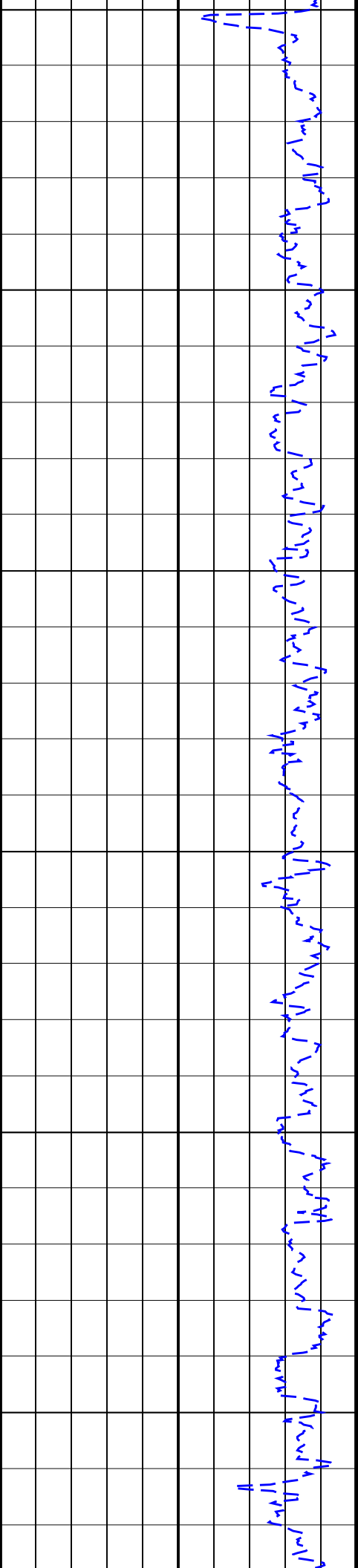




950
TVD

1000
TVD

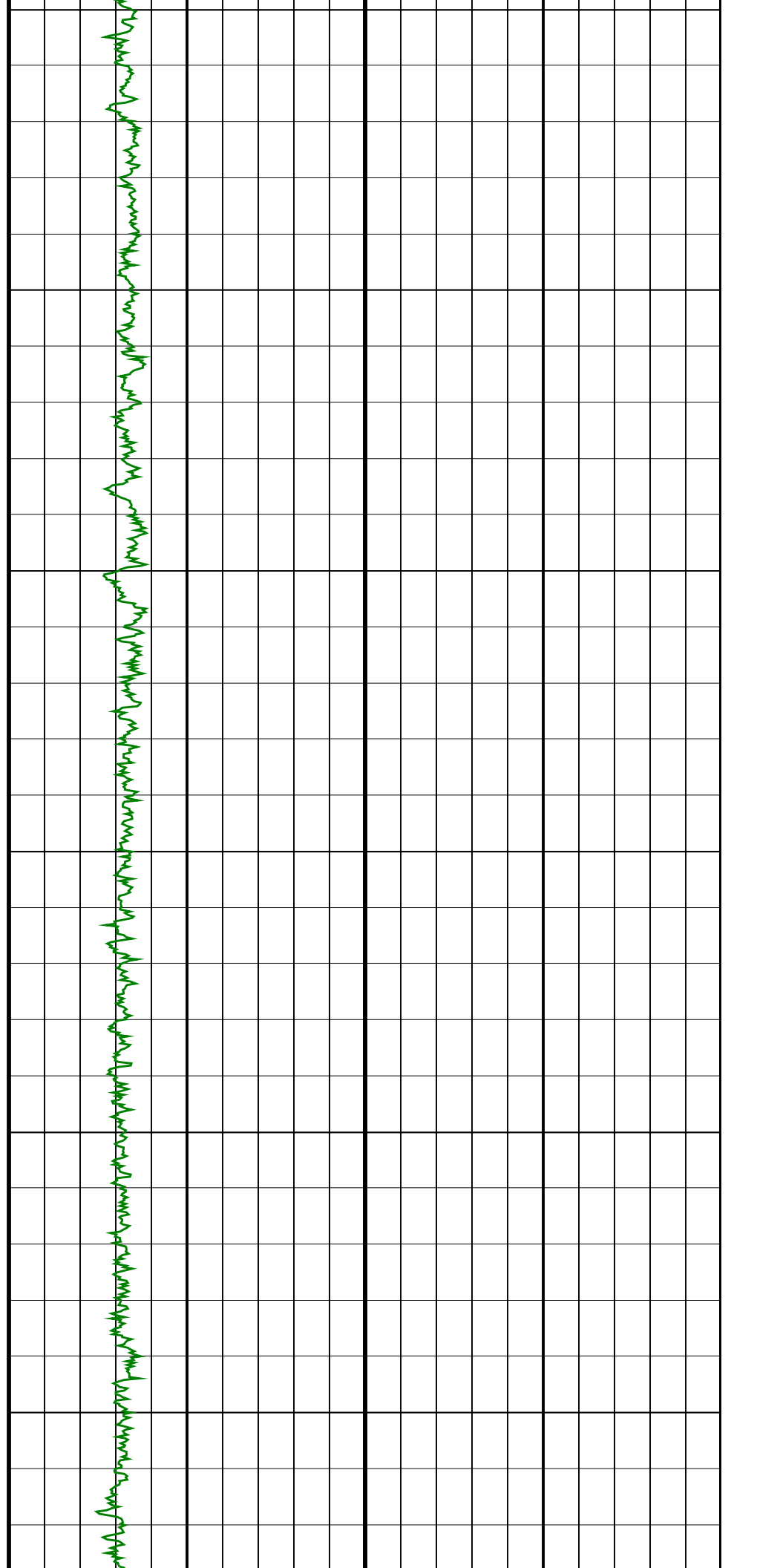


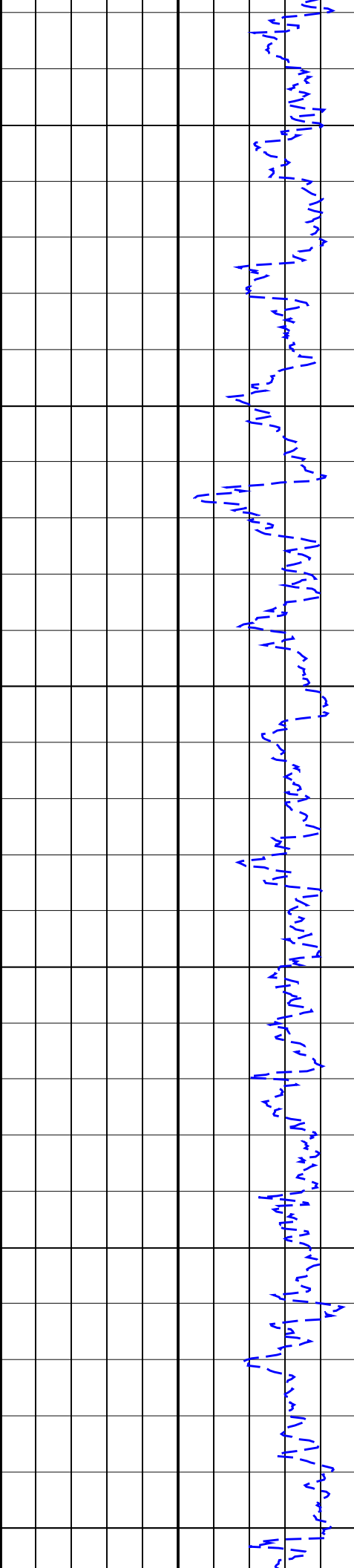


1050
TVD

1100
TVD

1150
TVD

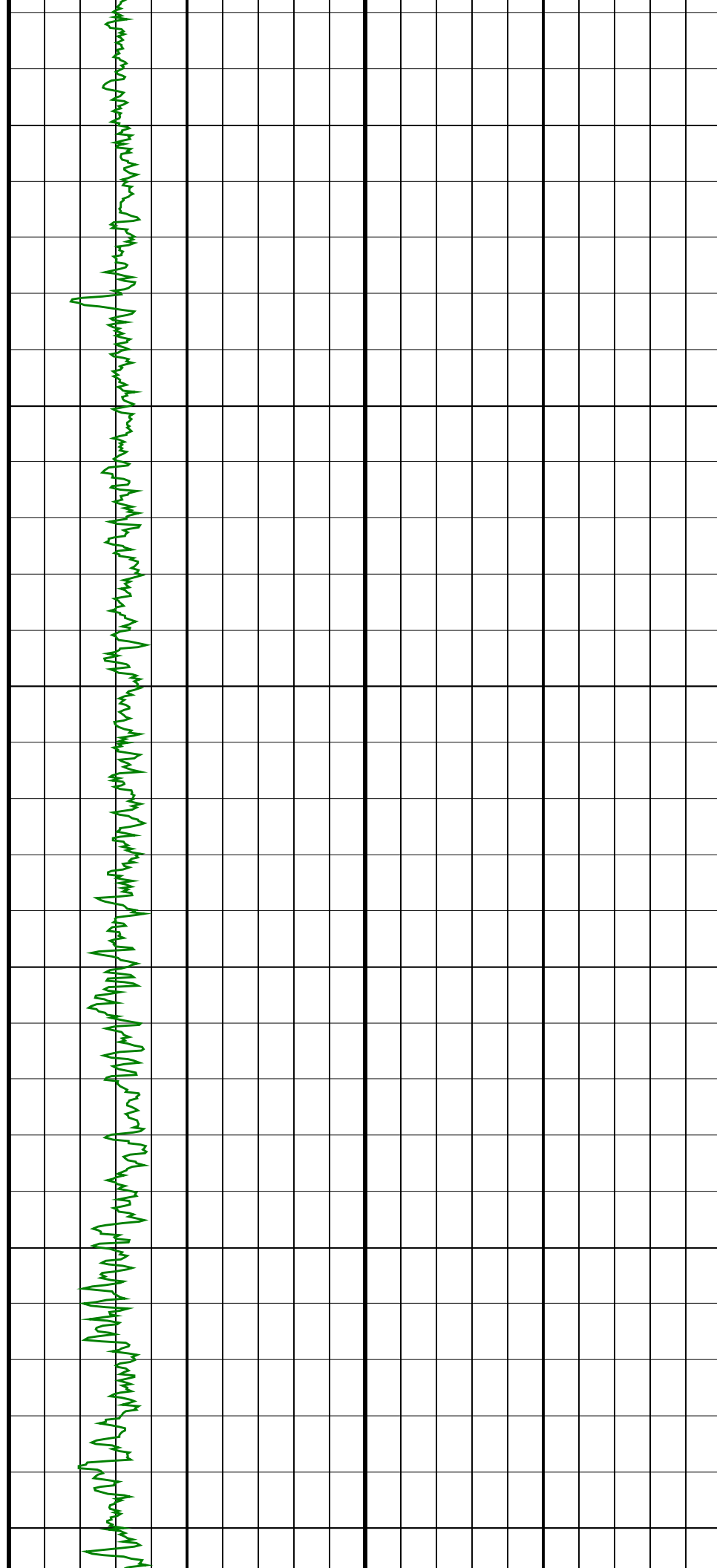


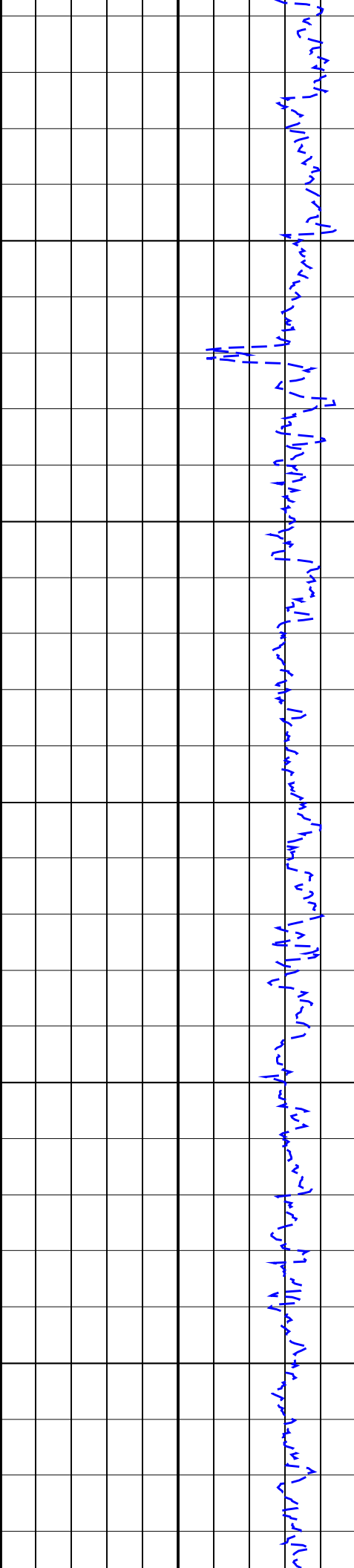


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TVD

1250
TVD

1300
TVD

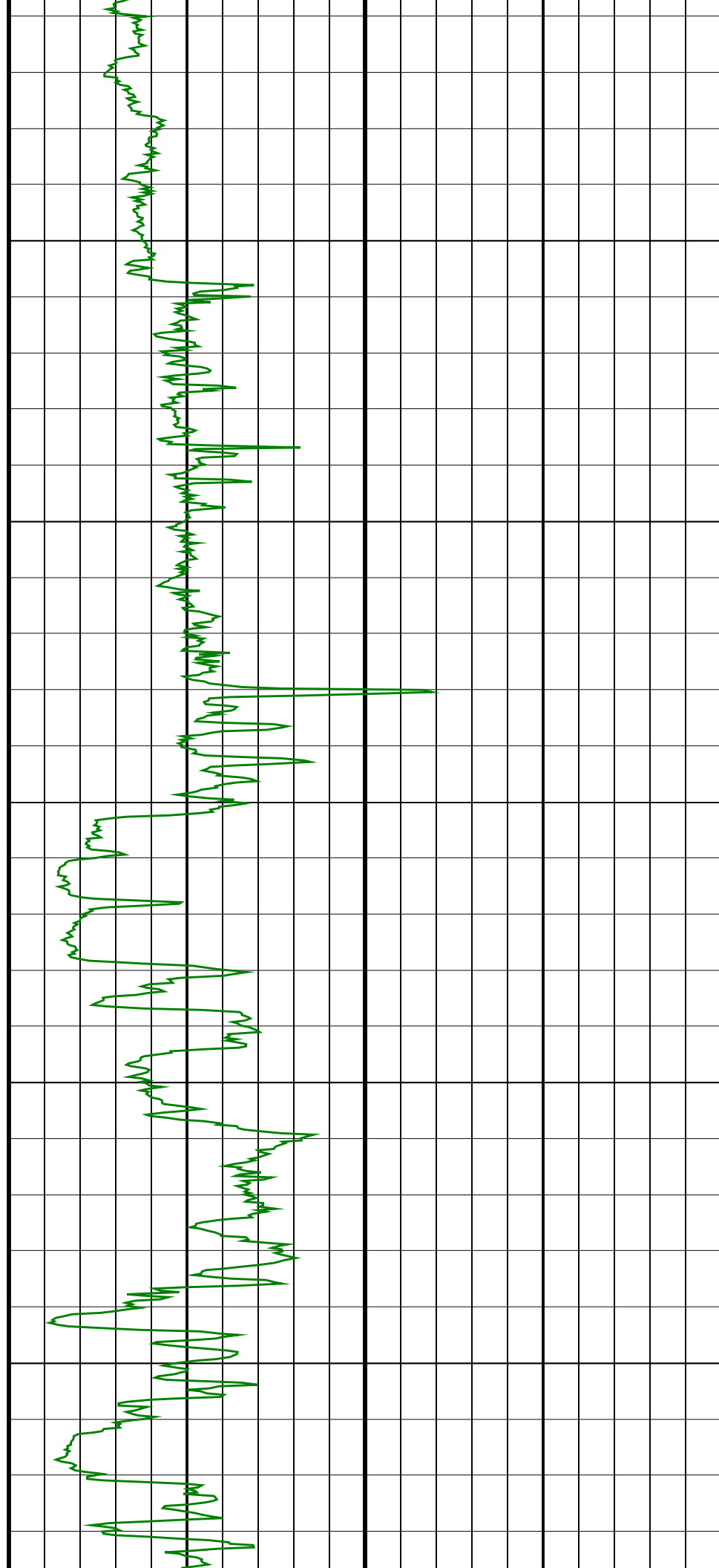


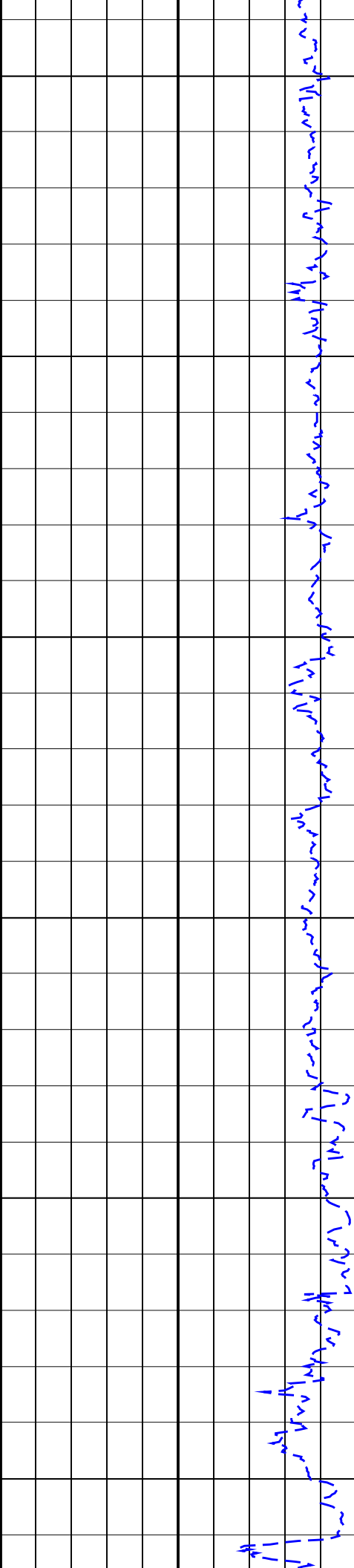


1350
TVD

1400
TVD

1450
TVD





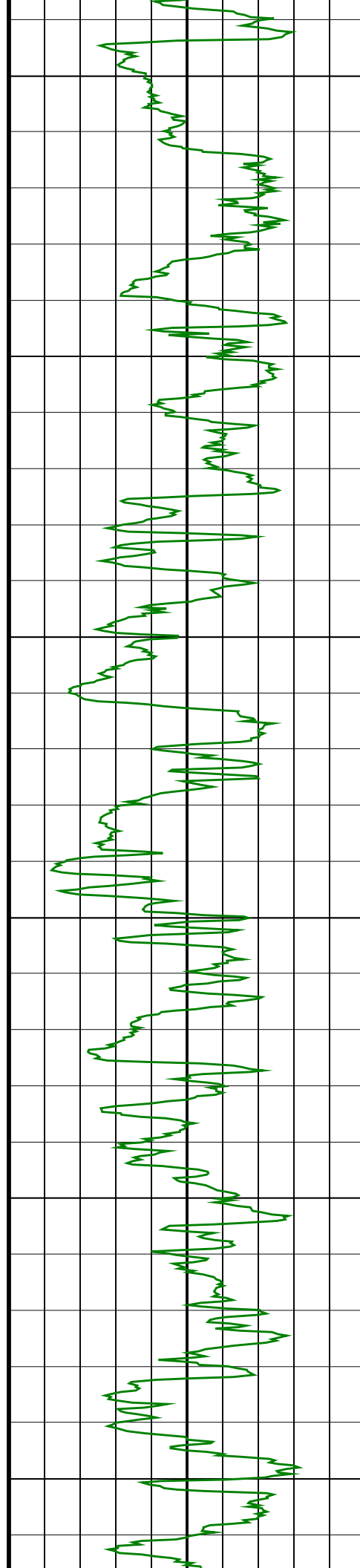
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TVD

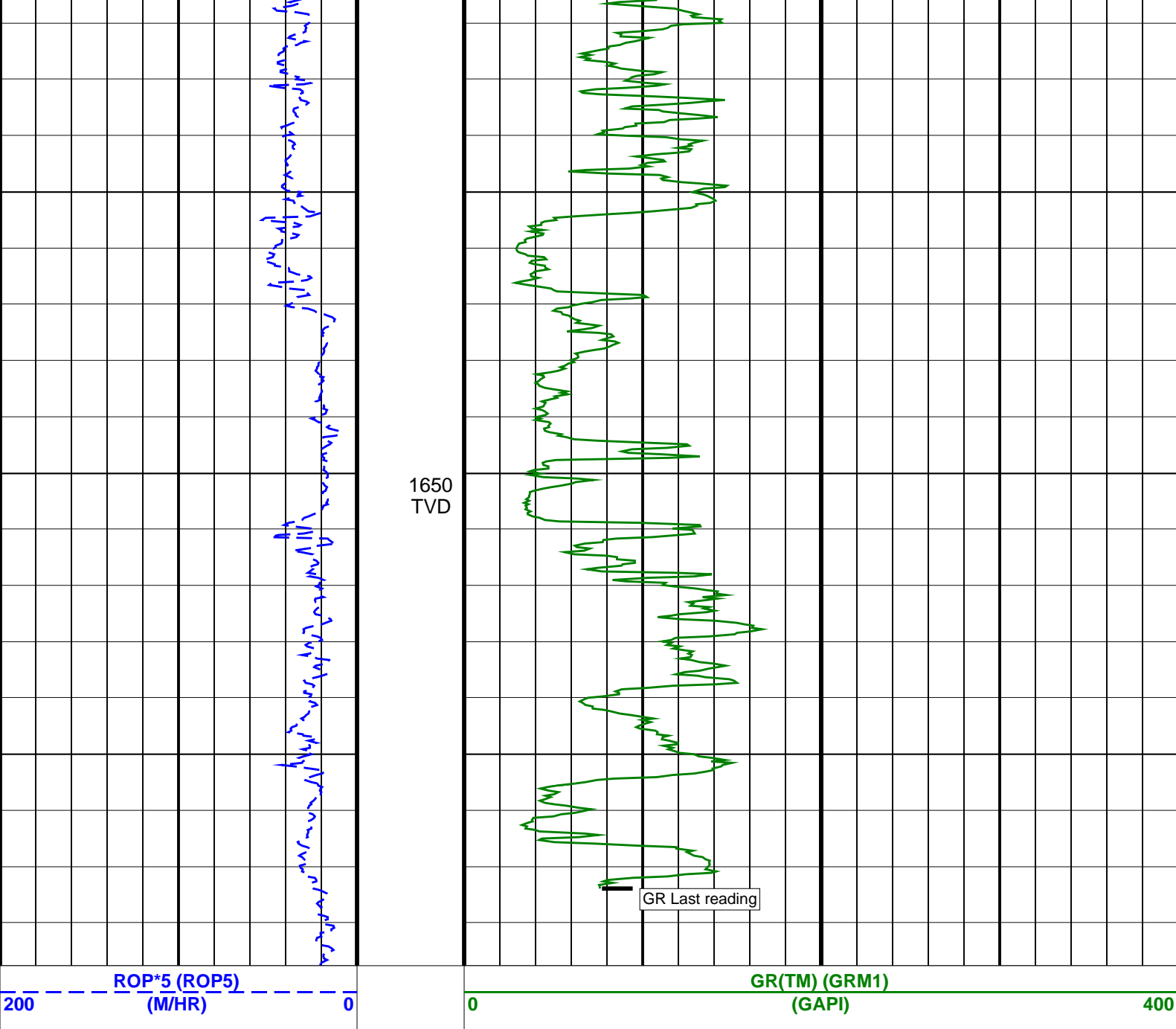
1550
TVD

Run 2

Run 3

1600
TVD





SCHLUMBERGER

Survey report

15-Jan-2005 01:49:53

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

Well.....: TNA A31A
API number.....: N/A
Engineer.....: A. De Castro/D. Hastie

RIG.....: ISDL 453
STATE.....: Victoria

Spud date.....: 31-Dec-2004
Last survey date.....: 14-Jan-05
Total accepted surveys...: 98
MD of first survey.....: 829.20 m
MD of last survey.....: 3406.00 m

----- 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.....: TopDrive
DF above permanent.....: 31.32 m

----- Vertical section origin-----
Latitude (+N/S-).....: 1.86 m
Departure (+E/W-).....: 6.34 m

----- Platform reference point-----
Latitude (+N/S-).....: 5774411.33 m
Departure (+E/W-).....: 624343.51 m

----- Geomagnetic data -----
Magnetic model.....: BGM version 2004
Magnetic date.....: 30-Dec-2004
Magnetic field strength...: 1198.28 HCNT
Magnetic dec (+E/W-).....: 13.22 degrees
Magnetic dip.....: -68.66 degrees

----- MWD survey Reference Criteria -----
Reference G.....: 1000.02 mGal
Reference H.....: 1198.28 HCNT
Reference Dip.....: -68.66 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.22 degrees
Grid convergence (+E/W-)..: -0.88 degrees

Azimuth from Vsect Origin to target: 59.21 degrees

Total az corr (+E/W-)....: 14.10 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

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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)	DLS (deg/10m)	Srvy tool type	Tool Corr (deg)
1	829.20	71.17	87.89	0.00	658.22	311.15	6.79	365.61	365.67	88.94	0.00	TIP	None
2	839.90	68.11	85.72	10.70	661.94	320.04	7.35	375.62	375.70	88.88	3.43	GYR	None
3	844.80	67.85	85.15	4.90	663.78	324.12	7.71	380.15	380.23	88.84	1.20	GYR	None
4	849.90	67.73	85.01	5.10	665.71	328.37	8.11	384.86	384.94	88.79	0.35	GYR	None
5	854.90	67.81	85.05	5.00	667.60	332.53	8.51	389.47	389.56	88.75	0.18	GYR	None
6	860.00	67.99	84.89	5.10	669.52	336.79	8.93	394.17	394.28	88.70	0.46	GYR	None
7	865.00	68.05	84.25	5.00	671.39	340.98	9.37	398.79	398.90	88.65	1.19	GYR	None
8	868.50	68.44	83.58	3.50	672.69	343.93	9.71	402.02	402.14	88.62	2.10	GYR	None
9	876.03	68.93	82.06	7.53	675.42	350.36	10.59	408.98	409.12	88.52	1.99	MWD	None
10	904.37	68.92	78.38	28.34	685.62	375.04	15.08	435.04	435.30	88.01	1.21	MWD	None
11	932.96	67.71	73.65	28.59	696.19	400.46	21.49	460.81	461.31	87.33	1.59	MWD	None
12	961.75	67.15	69.75	28.79	707.24	426.41	29.84	486.04	486.96	86.49	1.27	MWD	None
13	990.16	66.79	67.36	28.41	718.36	452.20	39.39	510.38	511.89	85.59	0.78	MWD	None
14	1018.78	64.90	63.76	28.62	730.07	478.15	50.19	534.15	536.50	84.63	1.32	MWD	None
15	1047.37	64.58	58.43	28.59	742.28	503.98	62.68	556.77	560.29	83.58	1.69	MWD	None
16	1076.21	65.54	54.98	28.84	754.44	530.10	77.04	578.62	583.73	82.42	1.13	MWD	None
17	1105.06	64.64	51.48	28.85	766.60	556.12	92.69	599.58	606.70	81.21	1.14	MWD	None
18	1133.70	64.08	50.79	28.64	778.99	581.68	108.89	619.68	629.18	80.03	0.29	MWD	None
19	1162.83	63.46	50.61	29.13	791.86	607.52	125.44	639.90	652.08	78.91	0.22	MWD	None
20	1191.32	64.51	51.21	28.49	804.36	632.86	141.59	659.78	674.80	77.89	0.41	MWD	None
21	1220.04	65.26	52.78	28.72	816.55	658.66	157.60	680.27	698.28	76.96	0.56	MWD	None
22	1248.61	65.19	53.67	28.57	828.52	684.46	173.13	701.04	722.11	76.13	0.28	MWD	None
23	1277.97	64.24	52.30	29.36	841.06	710.85	189.11	722.24	746.59	75.33	0.53	MWD	None
24	1306.42	64.97	51.03	28.45	853.26	736.32	205.05	742.40	770.20	74.56	0.48	MWD	None
25	1334.98	64.90	51.51	28.56	865.36	761.95	221.24	762.58	794.02	73.82	0.15	MWD	None
26	1363.60	64.10	51.12	28.62	877.68	787.53	237.38	782.75	817.95	73.13	0.31	MWD	None
27	1392.02	64.10	51.60	28.42	890.10	812.86	253.34	802.71	841.74	72.48	0.15	MWD	None
28	1420.82	63.01	51.70	28.80	902.92	838.42	269.34	822.94	865.89	71.88	0.38	MWD	None
29	1449.63	58.28	52.99	28.81	917.04	863.34	284.68	842.81	889.59	71.34	1.69	MWD	None
30	1478.39	57.09	52.96	28.76	932.42	887.50	299.32	862.21	912.69	70.86	0.41	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 (m)	At Azim (deg)	DLS (deg/10m)	Srvy tool type	Tool Corr (deg)
31	1507.31	58.13	52.18	28.92	947.91	911.76	314.16	881.60	935.91	70.39	0.43	MWD	None
32	1535.98	57.34	51.51	28.67	963.21	935.80	329.14	900.67	958.92	69.93	0.34	MWD	None
33	1564.73	57.68	50.53	28.75	978.66	959.80	344.39	919.52	981.90	69.47	0.31	MWD	None
34	1593.34	58.73	50.51	28.61	993.73	983.84	359.85	938.29	1004.93	69.02	0.37	MWD	None
35	1622.06	58.70	51.27	28.72	1008.65	1008.13	375.34	957.33	1028.28	68.59	0.23	MWD	None
36	1650.74	57.92	51.60	28.68	1023.71	1032.31	390.55	976.41	1051.62	68.20	0.29	MWD	None
37	1679.53	58.22	52.03	28.79	1038.94	1056.54	405.66	995.62	1075.09	67.83	0.16	MWD	None
38	1708.26	57.25	52.19	28.73	1054.28	1080.64	420.58	1014.79	1098.49	67.49	0.34	MWD	None
39	1736.96	56.77	51.75	28.70	1069.90	1104.52	435.41	1033.75	1121.70	67.16	0.21	MWD	None
40	1765.75	58.14	50.96	28.79	1085.39	1128.57	450.56	1052.70	1145.07	66.83	0.53	MWD	None
41	1794.53	58.45	51.09	28.78	1100.52	1152.80	465.96	1071.74	1168.65	66.50	0.11	MWD	None
42	1823.43	61.37	51.42	28.90	1115.00	1177.56	481.61	1091.24	1192.79	66.19	1.02	MWD	None
43	1852.14	65.17	52.02	28.71	1127.91	1202.98	497.49	1111.37	1217.63	65.88	1.34	MWD	None
44	1880.83	67.63	52.39	28.69	1139.40	1229.07	513.60	1132.14	1243.19	65.60	0.87	MWD	None
45	1909.82	68.76	51.88	28.99	1150.17	1255.78	530.12	1153.39	1269.38	65.32	0.42	MWD	None
46	1938.41	67.70	51.56	28.59	1160.77	1282.11	546.57	1174.23	1295.20	65.04	0.39	MWD	None
47	1966.95	67.93	52.24	28.54	1171.55	1308.32	562.88	1195.03	1320.95	64.78	0.23	MWD	None
48	1995.71	68.39	51.40	28.76	1182.25	1334.79	579.38	1216.01	1346.98	64.52	0.31	MWD	None
49	2024.24	68.88	51.69	28.53	1192.64	1361.13	595.90	1236.82	1372.89	64.28	0.20	MWD	None
50	2052.78	68.70	51.76	28.54	1202.97	1387.51	612.38	1257.70	1398.87	64.04	0.07	MWD	None
51	2081.24	68.21	52.62	28.46	1213.42	1413.78	628.61	1278.62	1424.79	63.82	0.33	MWD	None
52	2109.70	68.72	52.80	28.46	1223.87	1440.08	644.65	1299.68	1450.77	63.62	0.19	MWD	None
53	2138.33	68.11	52.63	28.63	1234.40	1466.53	660.78	1320.86	1476.92	63.42	0.22	MWD	None
54	2166.99	68.48	52.81	28.66	1245.00	1492.99	676.90	1342.05	1503.10	63.23	0.14	MWD	None
55	2195.90	68.47	52.29	28.91	1255.60	1519.70	693.26	1363.40	1529.53	63.05	0.17	MWD	None
56	2224.99	68.81	52.21	29.09	1266.20	1546.59	709.84	1384.82	1556.15	62.86	0.12	MWD	None
57	2253.25	68.59	51.81	28.26	1276.46	1572.72	726.05	1405.57	1582.02	62.68	0.15	MWD	None
58	2281.77	68.54	52.05	28.52	1286.89	1599.05	742.42	1426.47	1608.11	62.50	0.08	MWD	None
59	2310.52	68.29	52.45	28.75	1297.46	1625.59	758.79	1447.61	1634.42	62.34	0.16	MWD	None
60	2339.19	68.96	51.96	28.67	1307.91	1652.08	775.15	1468.71	1660.71	62.18	0.28	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 (m)	At Azim (deg)	DLS (deg/10m)	Srvy tool type	Tool Corr (deg)
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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)	DLS (deg/ 10m)	Srvy tool type	Tool Corr (deg)
61	2368.10	68.48	51.84	28.91	1318.41	1678.80	791.77	1489.90	1687.22	62.01	0.17	MWD	None
62	2396.83	68.05	51.84	28.73	1329.04	1705.27	808.26	1510.89	1713.50	61.86	0.15	MWD	None
63	2425.39	67.21	51.79	28.56	1339.91	1731.46	824.59	1531.65	1739.51	61.70	0.29	MWD	None
64	2453.53	67.10	51.85	28.14	1350.84	1757.18	840.62	1552.03	1765.06	61.56	0.04	MWD	None
65	2482.32	66.73	51.97	28.79	1362.13	1783.45	856.95	1572.88	1791.18	61.42	0.13	MWD	None
66	2511.09	67.24	51.79	28.77	1373.38	1809.71	873.30	1593.71	1817.30	61.28	0.19	MWD	None
67	2539.55	67.67	51.79	28.46	1384.29	1835.78	889.56	1614.36	1843.23	61.14	0.15	MWD	None
68	2568.21	67.99	52.05	28.66	1395.10	1862.10	905.93	1635.25	1869.43	61.01	0.14	MWD	None
69	2596.73	68.31	51.78	28.52	1405.72	1888.36	922.26	1656.09	1895.57	60.89	0.14	MWD	None
70	2625.69	68.10	51.02	28.96	1416.47	1915.00	939.03	1677.10	1922.10	60.75	0.25	MWD	None
71	2654.52	68.46	50.84	28.83	1427.14	1941.51	955.91	1697.90	1948.49	60.62	0.14	MWD	None
72	2683.23	68.42	50.91	28.71	1437.69	1967.92	972.76	1718.61	1974.82	60.49	0.03	MWD	None
73	2711.74	68.25	50.85	28.51	1448.21	1994.14	989.48	1739.17	2000.94	60.36	0.06	MWD	None
74	2740.28	68.70	50.38	28.54	1458.69	2020.39	1006.33	1759.69	2027.12	60.24	0.22	MWD	None
75	2769.49	68.89	50.14	29.21	1469.25	2047.29	1023.74	1780.63	2053.94	60.10	0.10	MWD	None
76	2798.25	69.22	49.90	28.76	1479.53	2073.81	1040.99	1801.21	2080.39	59.97	0.14	MWD	None
77	2826.73	69.59	50.22	28.48	1489.55	2100.13	1058.11	1821.65	2106.66	59.85	0.17	MWD	None
78	2855.37	69.67	50.05	28.64	1499.52	2126.64	1075.32	1842.26	2133.13	59.73	0.06	MWD	None
79	2883.98	69.70	50.07	28.61	1509.45	2153.13	1092.54	1862.83	2159.58	59.61	0.01	MWD	None
80	2912.55	69.40	50.07	28.57	1519.43	2179.56	1109.73	1883.36	2185.98	59.49	0.11	MWD	None
81	2941.02	69.89	49.59	28.47	1529.34	2205.89	1126.94	1903.75	2212.30	59.38	0.23	MWD	None
82	2969.59	70.01	49.54	28.57	1539.13	2232.35	1144.35	1924.18	2238.75	59.26	0.05	MWD	None
83	2998.37	70.14	49.59	28.78	1548.94	2259.03	1161.90	1944.78	2265.43	59.14	0.05	MWD	None
84	3026.61	70.41	49.11	28.24	1558.47	2285.22	1179.22	1964.95	2291.63	59.03	0.19	MWD	None
85	3053.74	70.40	49.76	27.13	1567.57	2310.41	1195.84	1984.36	2316.83	58.93	0.23	MWD	None
86	3082.64	70.60	49.78	28.90	1577.22	2337.28	1213.43	2005.16	2343.73	58.82	0.07	MWD	None
87	3114.05	69.63	49.35	31.41	1587.90	2366.40	1232.59	2027.64	2372.89	58.70	0.33	MWD	None
88	3142.62	69.49	49.83	28.57	1597.88	2392.79	1249.94	2048.03	2399.33	58.60	0.16	MWD	None
89	3171.43	69.56	49.74	28.81	1607.96	2419.42	1267.37	2068.64	2426.00	58.51	0.04	MWD	None
90	3200.17	69.59	49.78	28.74	1617.99	2445.99	1284.77	2089.19	2452.62	58.41	0.02	MWD	None
[(c)2005 IDEAL ID9_1C_01] 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)	DLS (deg/ 10m)	Srvy tool type	Tool Corr (deg)
91	3228.27	69.31	49.79	28.10	1627.85	2471.94	1301.76	2109.29	2478.64	58.32	0.10	MWD	None
92	3257.23	68.90	49.83	28.96	1638.18	2498.64	1319.22	2129.96	2505.40	58.23	0.14	MWD	None
93	3285.70	68.37	49.64	28.47	1648.55	2524.79	1336.35	2150.19	2531.63	58.14	0.20	MWD	None
94	3314.68	67.99	49.16	28.98	1659.32	2551.30	1353.86	2170.61	2558.22	58.05	0.20	MWD	None
95	3343.03	67.96	49.28	28.35	1669.95	2577.18	1371.03	2190.51	2584.20	57.96	0.04	MWD	None
96	3371.46	67.58	49.50	28.43	1680.71	2603.11	1388.16	2210.49	2610.22	57.87	0.15	MWD	None
97	3385.16	67.61	49.35	13.70	1685.93	2615.59	1396.39	2220.11	2622.75	57.83	0.10	MWD	None
98	3406.00	67.61	49.35	20.84	1693.87	2634.57	1408.94	2234.73	2641.81	57.77	0.00	Projection to TD	
[(c)2005 IDEAL ID9_1C_01]													

Company:

ESSO Australia Pty. Ltd.

Well:

TNA A31A

Field:

Tuna

Rig:

ISDL 453

State:

Victoria

Gamma Ray Service

1:500 True Vertical Depth

Real Time Log

Schlumberger

