

**Company :** NOBLE ENERGY  
**Well :** OSCAR Y10-72-1HC  
**Field :** WATTENBERG

**Date :** 02-Dec-2014  
**Time :** 21:09



A Schlumberger Company

GAMMA-RAY

1" = 100'

FEET MD

COMPANY : NOBLE ENERGY  
WELL : OSCAR Y10-72-1HC  
FIELD : WATTENBERG  
COUNTY : WELD  
STATE : CO  
COUNTRY : USA  
API No. : 05-123-37941

COMPANY : NOBLE ENERGY  
WELL : OSCAR Y10-72-1HC  
FIELD : WATTENBERG  
COUNTY : WELD  
STATE : CO  
COUNTRY : USA  
API WELL No. : 05-123-37941

WELL LOCATION  
LAT:40°9'8"N LON:104°31'51"W  
X:1,299,777 Y:3,270,882 NAD83  
SEC:10 TWP:2N RANGE:64W

OTHER SERVICES

DIRECTIONAL  
ROP

DEPTH REF. : ROTARY TABLE  
ELEVATION : 24.00 ft (ROTARY TABLE - GROUND LEVEL)  
ALTITUDE : 4928.00 ft (GROUND LEVEL - MEAN SEA LEVEL)

BOREHOLE RECORD

DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
13 3/4	0	1149	0-20	1149	6848
8 3/4	1149	7471	20-90	6848	7471
6 1/8	7471	14600	90+/-6	7471	14600

CASING RECORD

CASING SIZE in	FROM ft	TO ft		
9 5/8	0	1142		
7	0	7456		

DRILLING Co.: H&P  
RIG : 277  
LMD UNIT No.: TRAILER DISTRICT : COMMERCE CTY  
SPUD DATE : 23-NOV-14  
LMD START DATE : 24-NOV-14 DEPTH : 1149 ft  
LMD END DATE : 02-DEC-14 DEPTH : 14600 ft  
TOTAL DEPTH : 14600 ft

RUN DATA

RUN NUMBER	1	2	3			
START DATE	24-NOV-14	26-NOV-14	28-NOV-14			
START TIME	16:20	7:00	17:30			
END DATE	26-NOV-14	27-NOV-14	03-DEC-14			
END TIME	6:50	13:00	04:00			
DEPTH IN ft	1149	6848	7471			
DEPTH OUT ft	6848	7471	14600			
LOG TOP ft	1149	6804	7429			
LOG BOTTOM ft	6804	7429	14556			
HOLE SIZE in	8 3/4	8 3/4	6 1/8			
MUD DATA @ ft	3802	6848	8340			
MUD TYPE	WATER BASED	WATER BASED	OIL BASED			
DENSITY lb/gal	9.10	10.80	9.30			
VISCOSITY s/qt	35	42	52			
pH	10.9	9.3				
FLUID LOSS cm3/30						
SALINITY ppm	500	900	63000			
Rm ohmm @ deg F	@	@	@			
Rmf ohmm @ deg F	@	@	@			

MAX REC TEMP deg F	144	166	249			
Rm @ MAX TEMP ohmm						
LWD ENGINEER #1	C.WELTY	C.WELTY	C.WELTY			
LWD ENGINEER #2	B.FOSTER	B.FOSTER	B.FOSTER			
LWD ENGINEER #3						

REMARKS

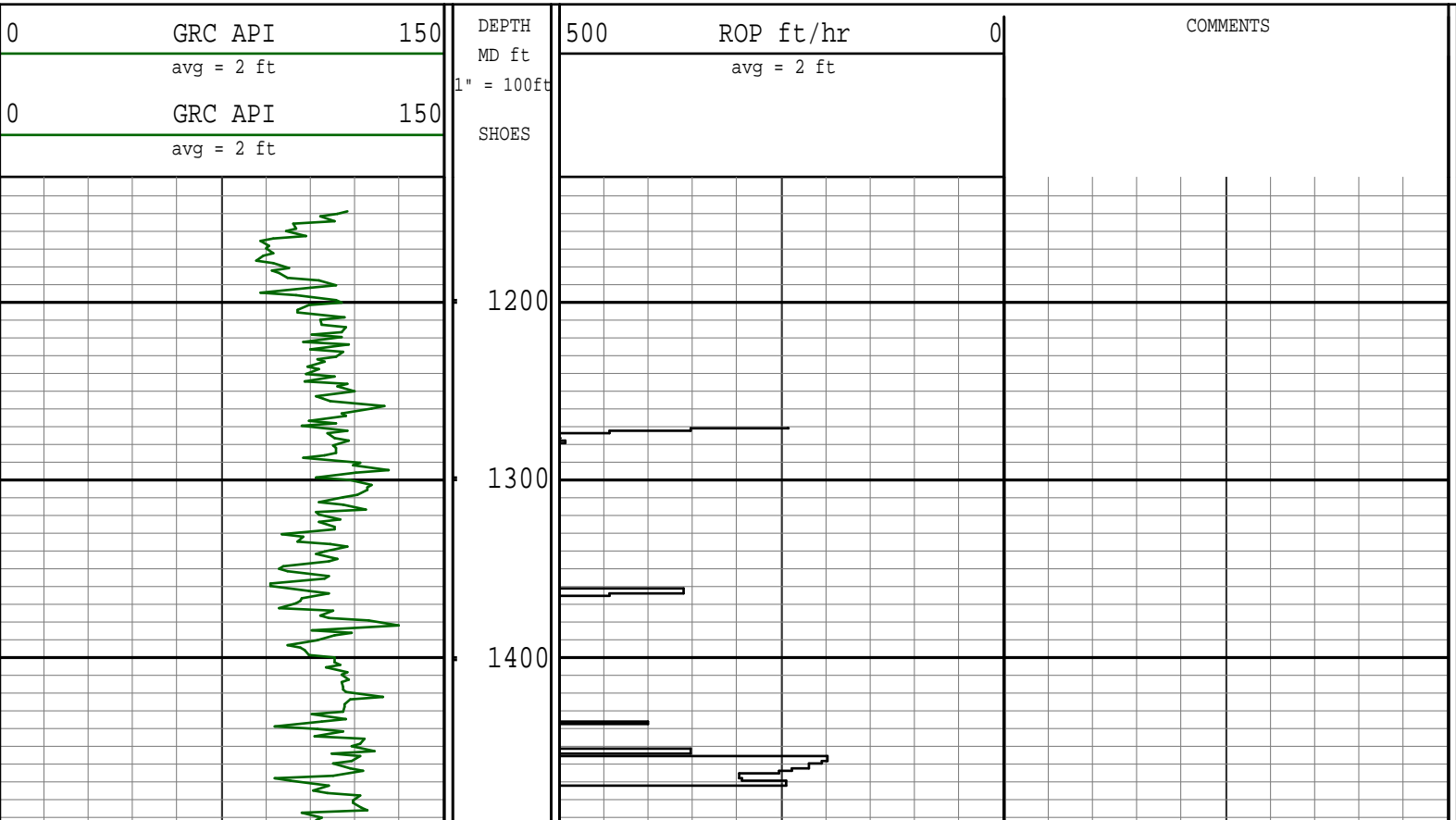
NOBLE ENERGY INC, AFE #: 200184  
 PATHFINDER JOB #: 14CC00658

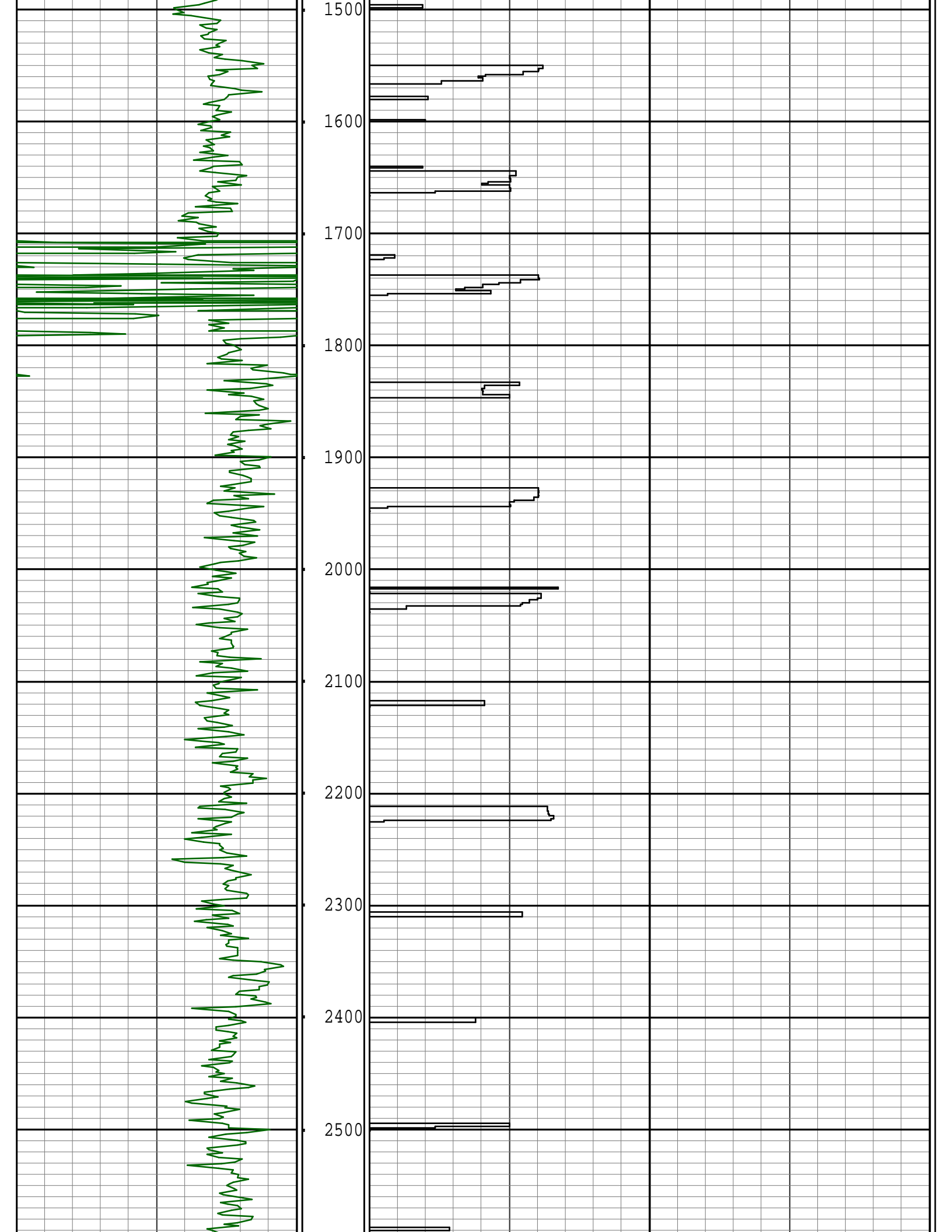
ALL LOGGING DATA IS TRANSMITTED UNLESS STATED OTHERWISE.  
 ALL REFERENCES TO LOG TOP, LOG BOTTOM, OR LOGGING TOOL DEPTH REFER TO THE GAMMA-RAY SENSOR UNLESS STATED .  
 ALL ANNOTATIONS IN THE DEPTH TRACK ARE REFERENCED TO BIT DEPTH.  
 RUN #1: 6 3/4" HDS1-R/GAMMA LOGGING RUN.  
 RUN #2: 6 3/4" HDS1-R/GAMMA LOGGING RUN.  
 RUN #3: 4 3/4" HDS1-R/GAMMA LOGGING RUN.

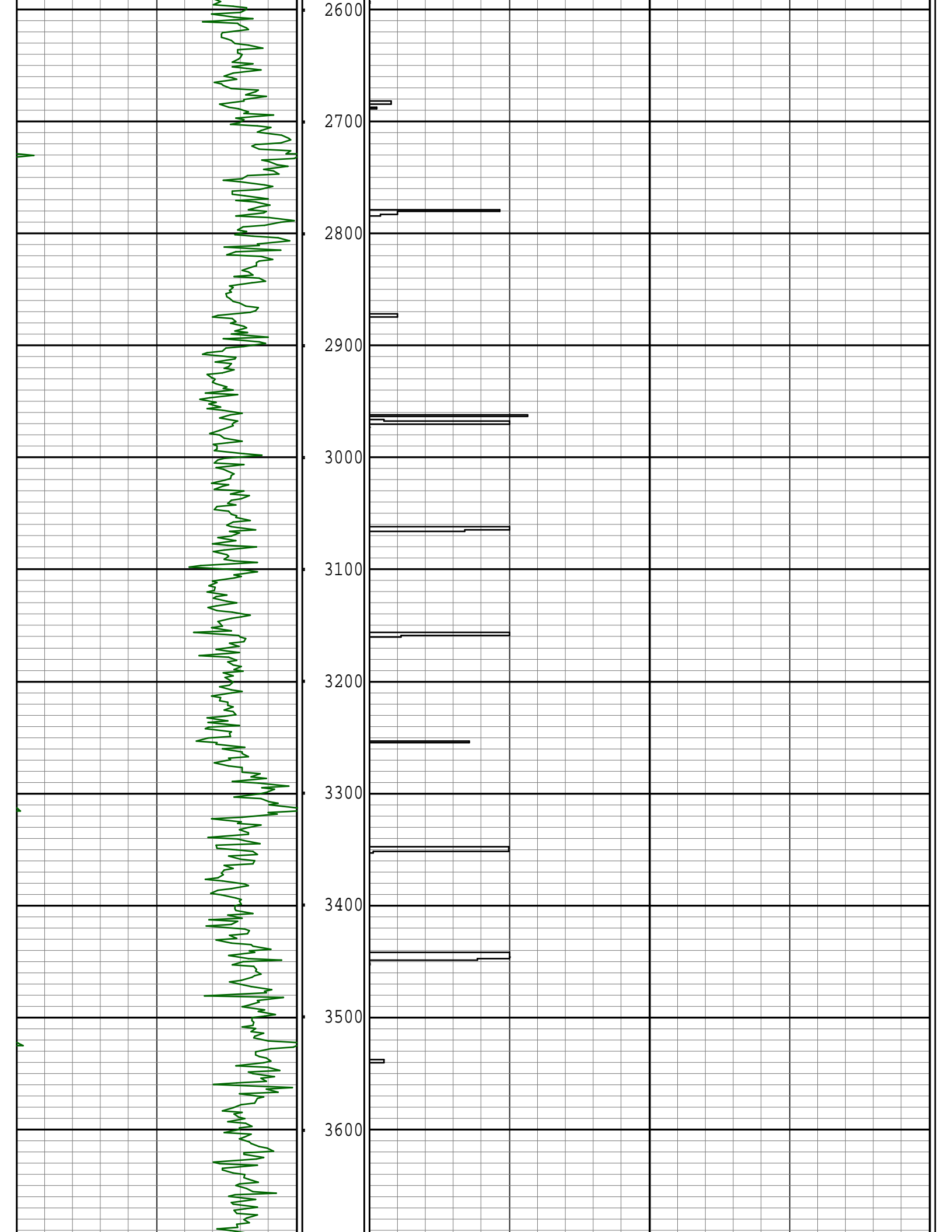
REMARK #1: GAMMA-RAY SERVICES BEGIN AT 1499' MD PER CUSTOMER'S REQUEST.  
 REMARK #2: MEMORY DATA PRESENTED FROM 1499'-6000' MD (1499'-5960' TVD) DUE TO HIGH ROP.  
 REMARK #3: GAMMA-RAY LOGGED THROUGH CASING FROM 7429'-7466' MD (7054'-7055' TVD).

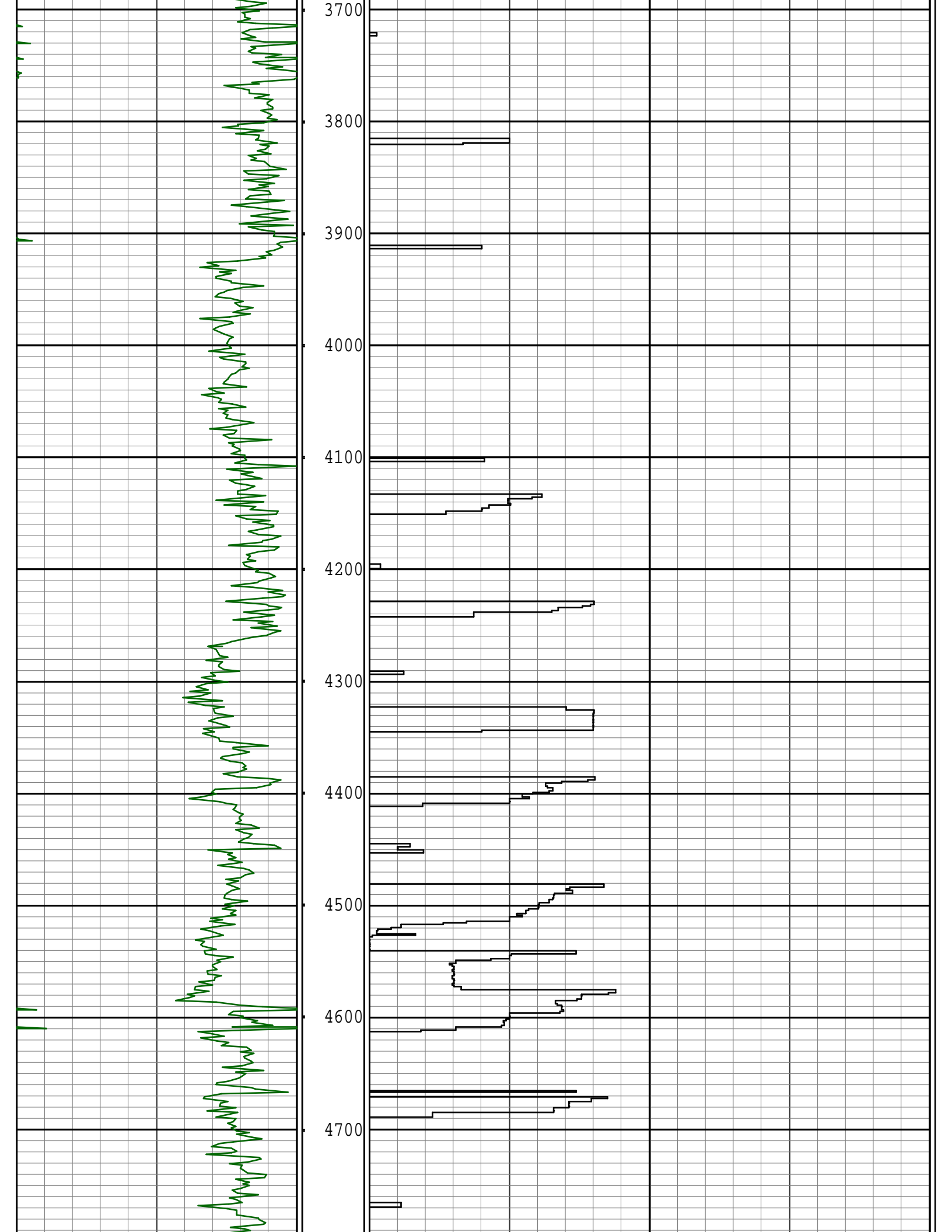
NOTICE - All interpretations are opinions based on inferences from electrical or other measurements and we do not guarantee the accuracy or correctness of any interpretations. We shall not, except in the case of gross or willful negligence on our part, be liable or responsible for loss, costs, damages or expenses incurred or sustained by anyone as a result of any interpretations made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.  
 PATHFINDER - A Schlumberger Company

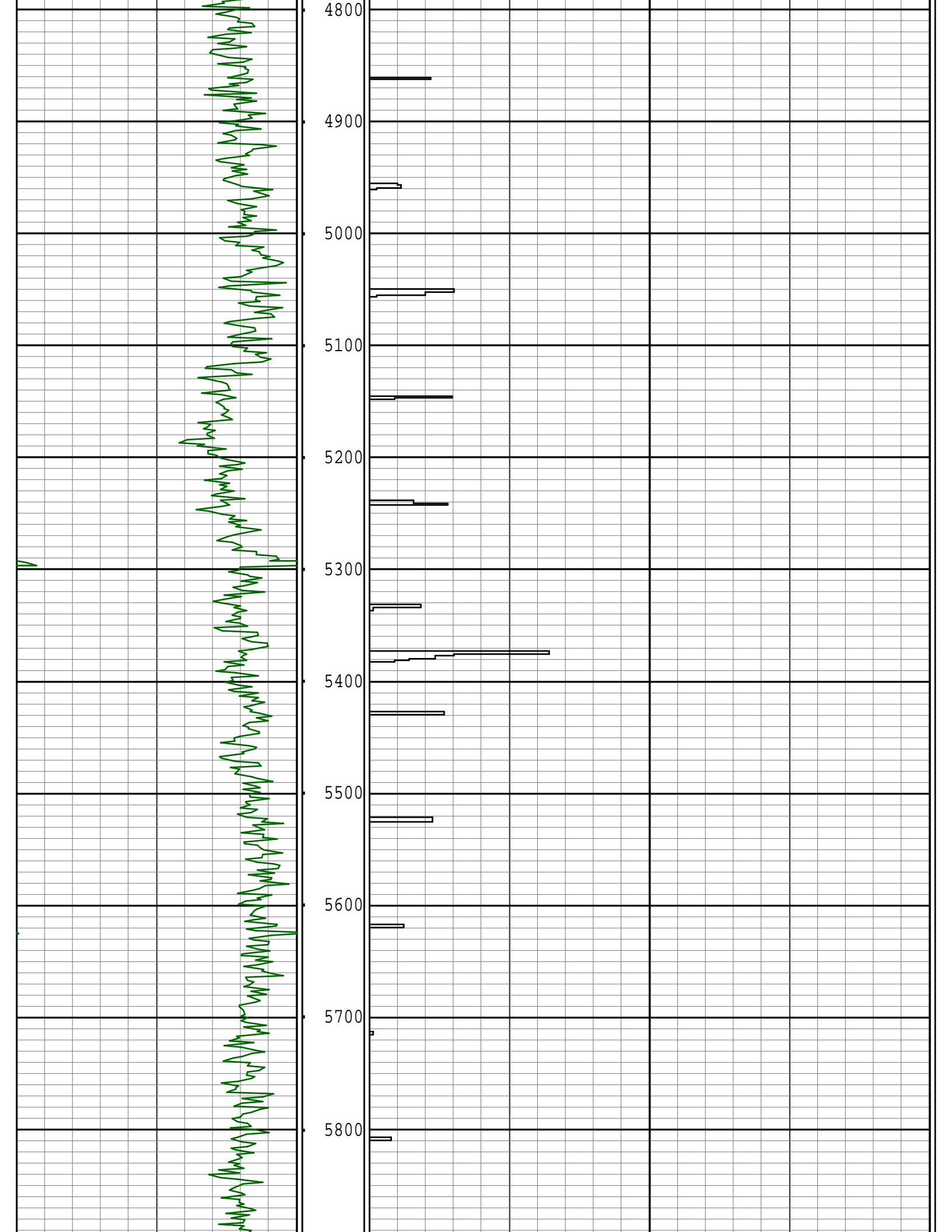
Version No : RX5 V6.05B Release 20Jun2014  
 Plot Time : 02-Dec-2014 21:07

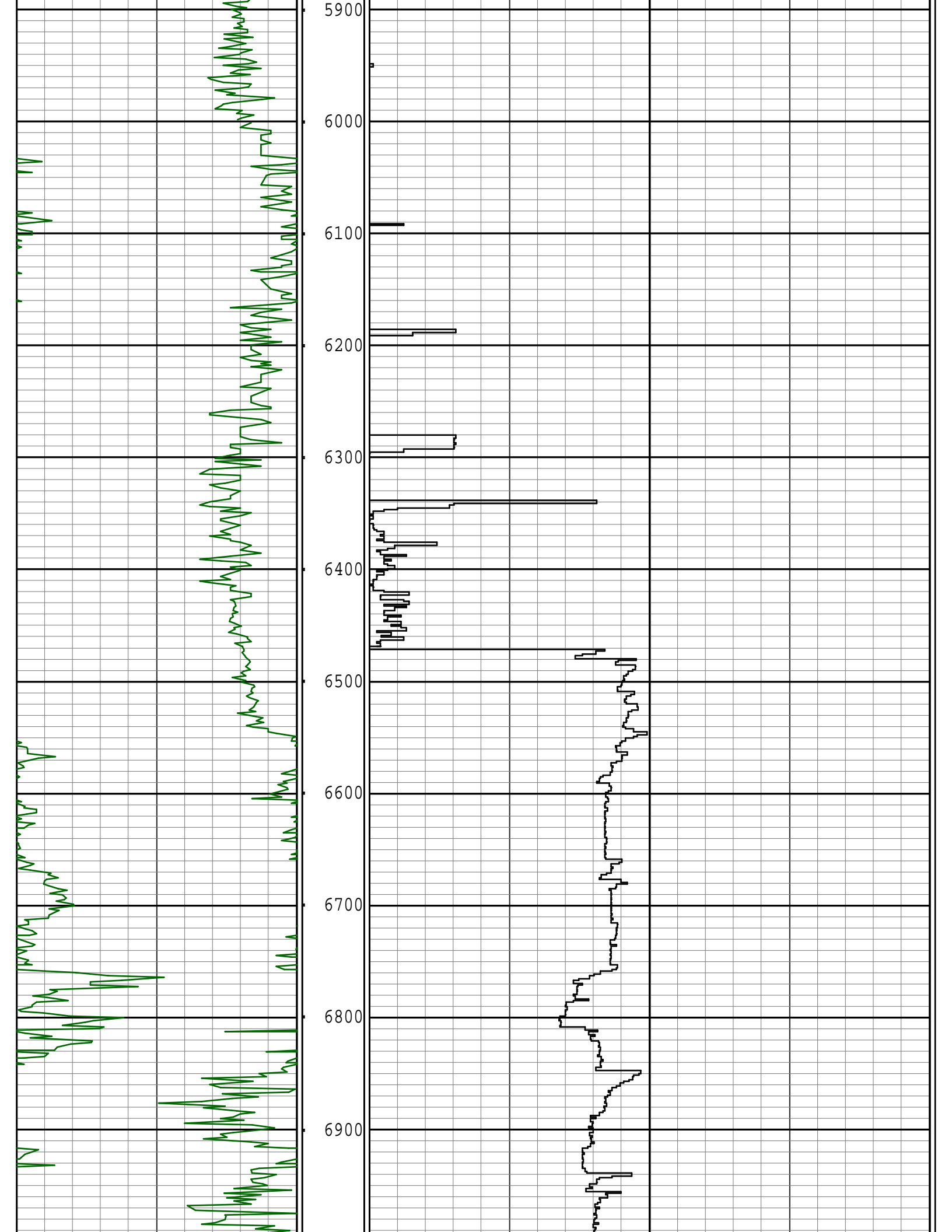




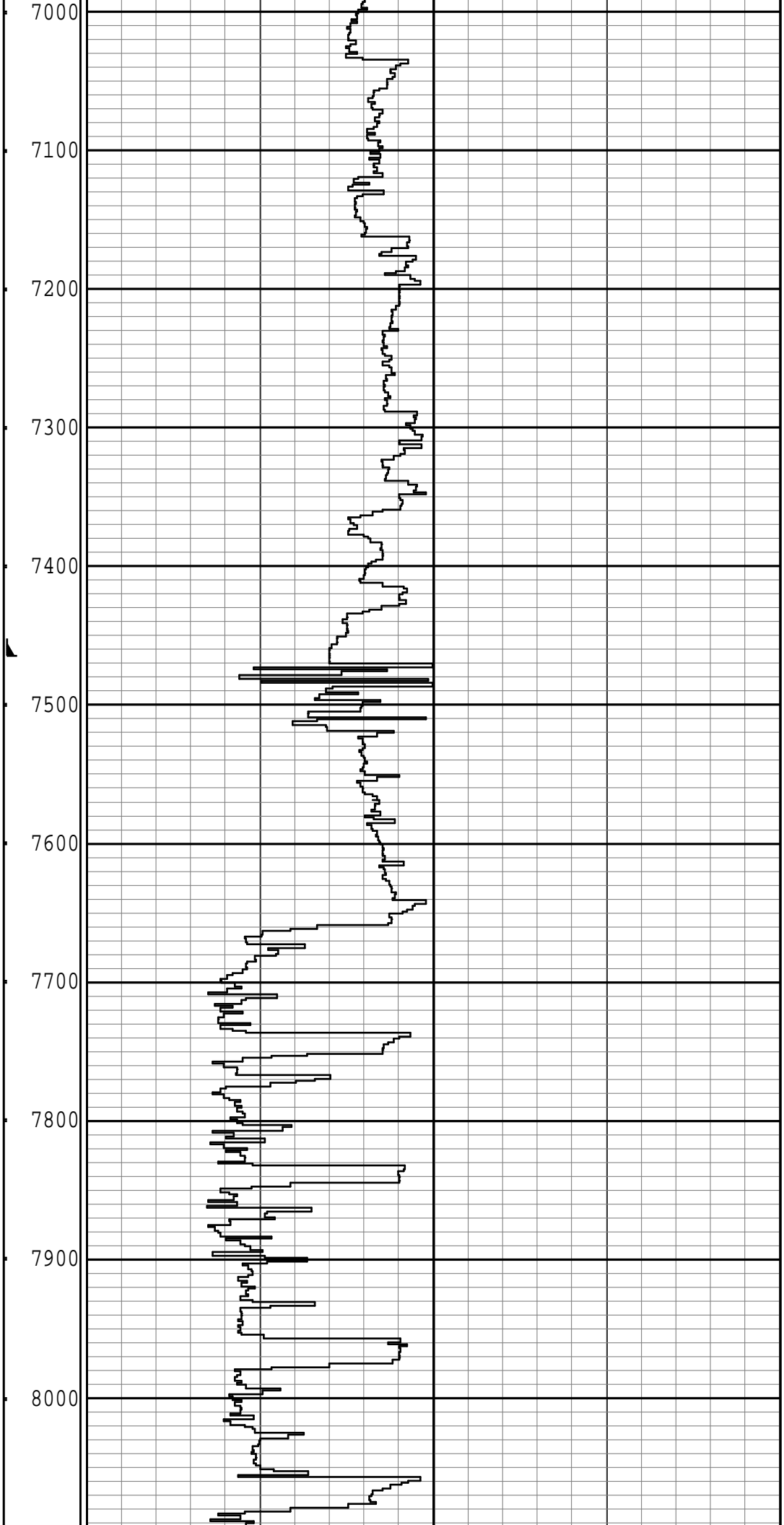
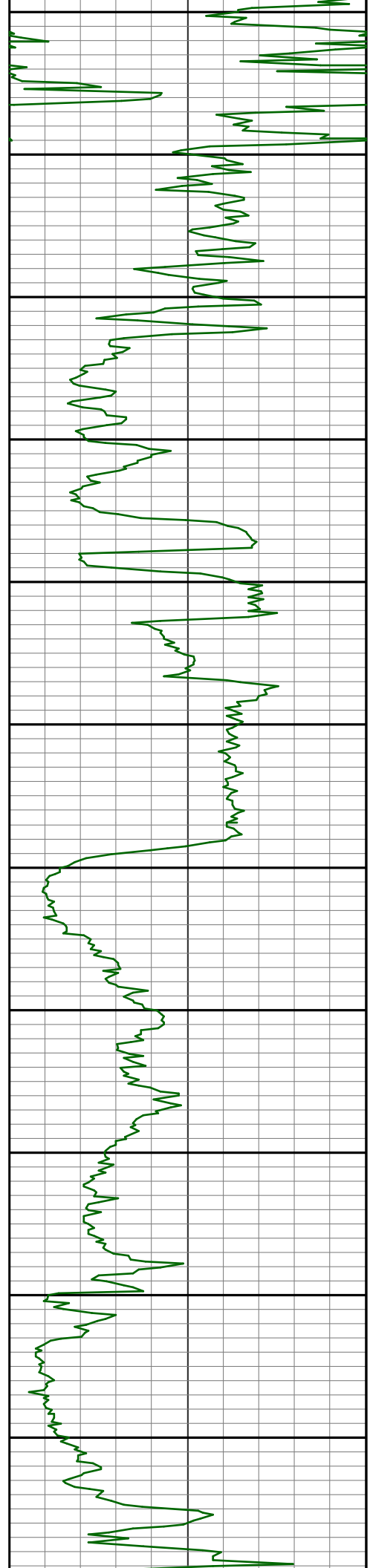


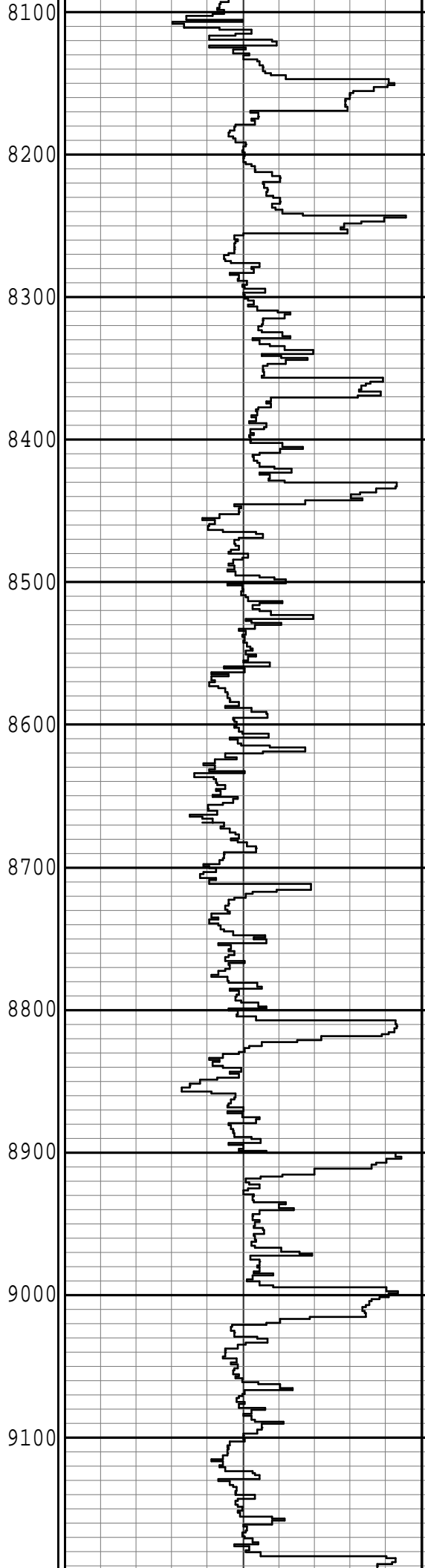
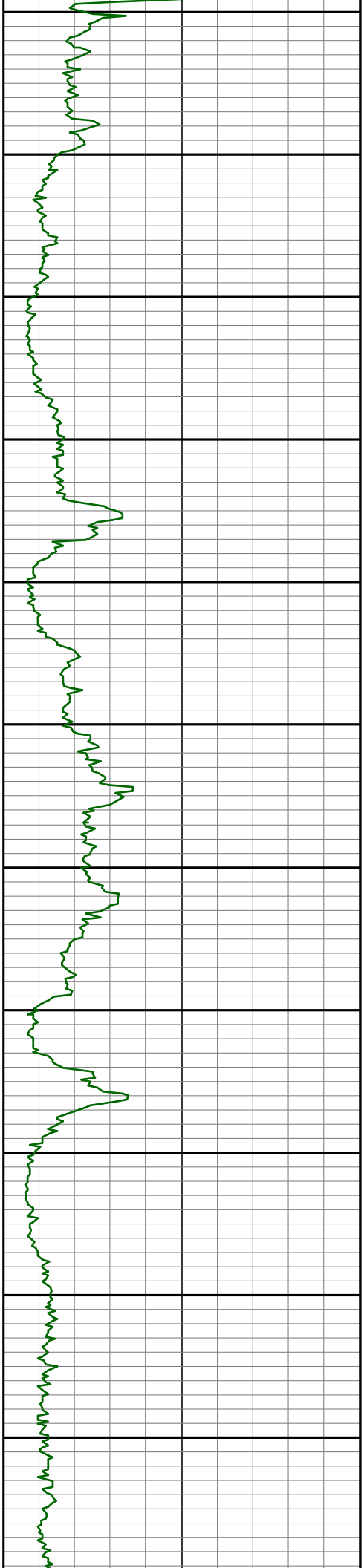


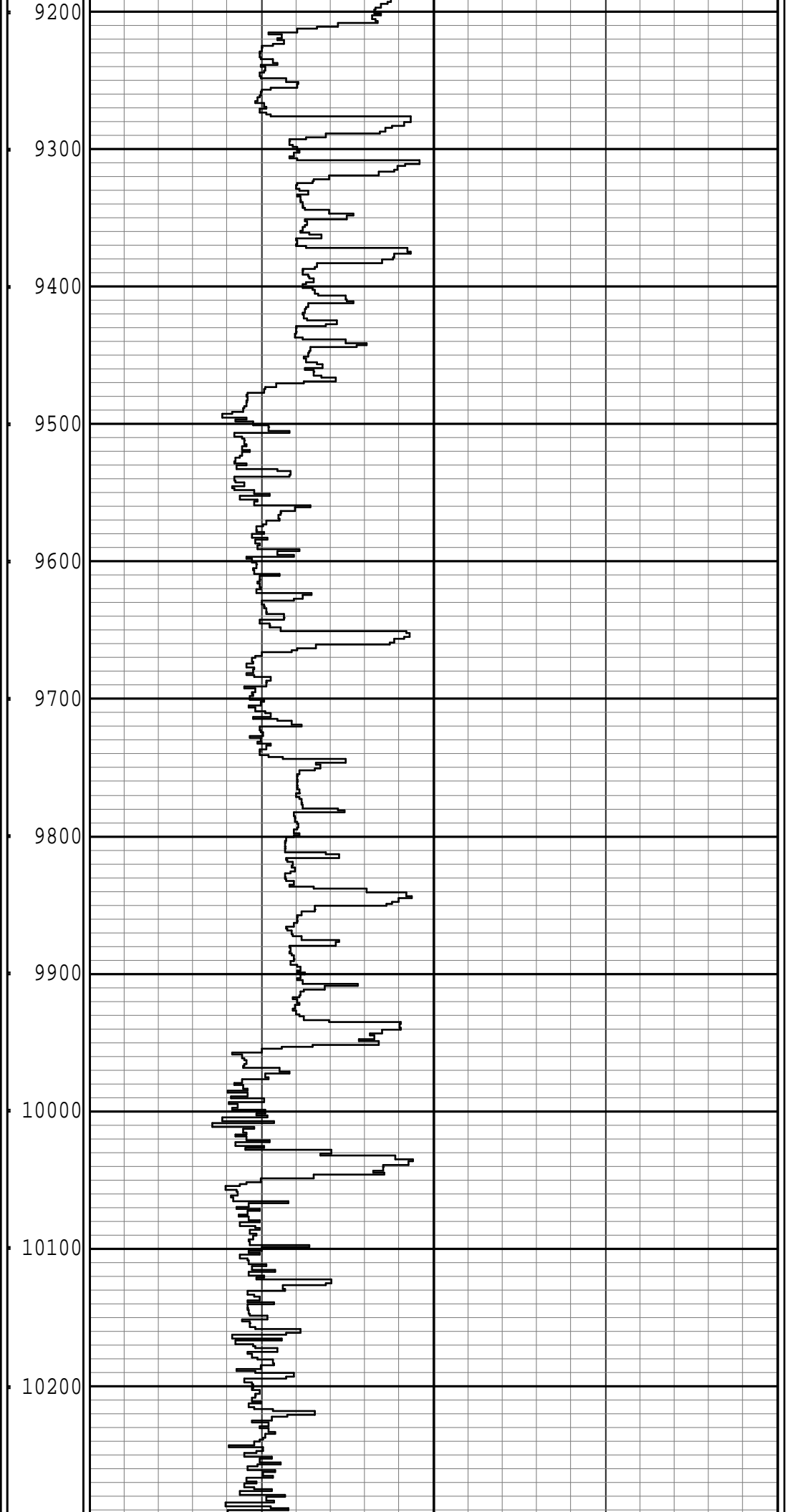
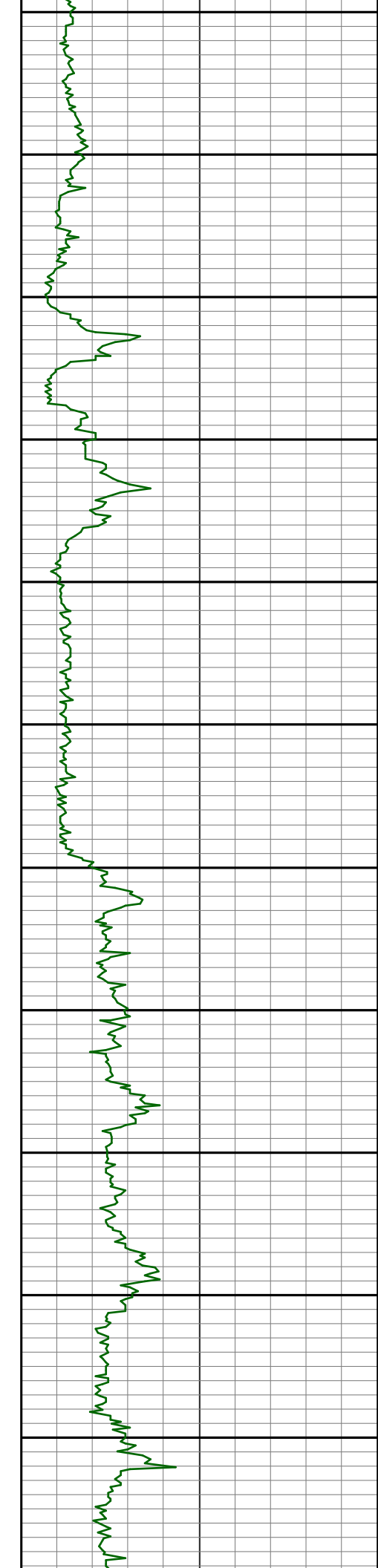


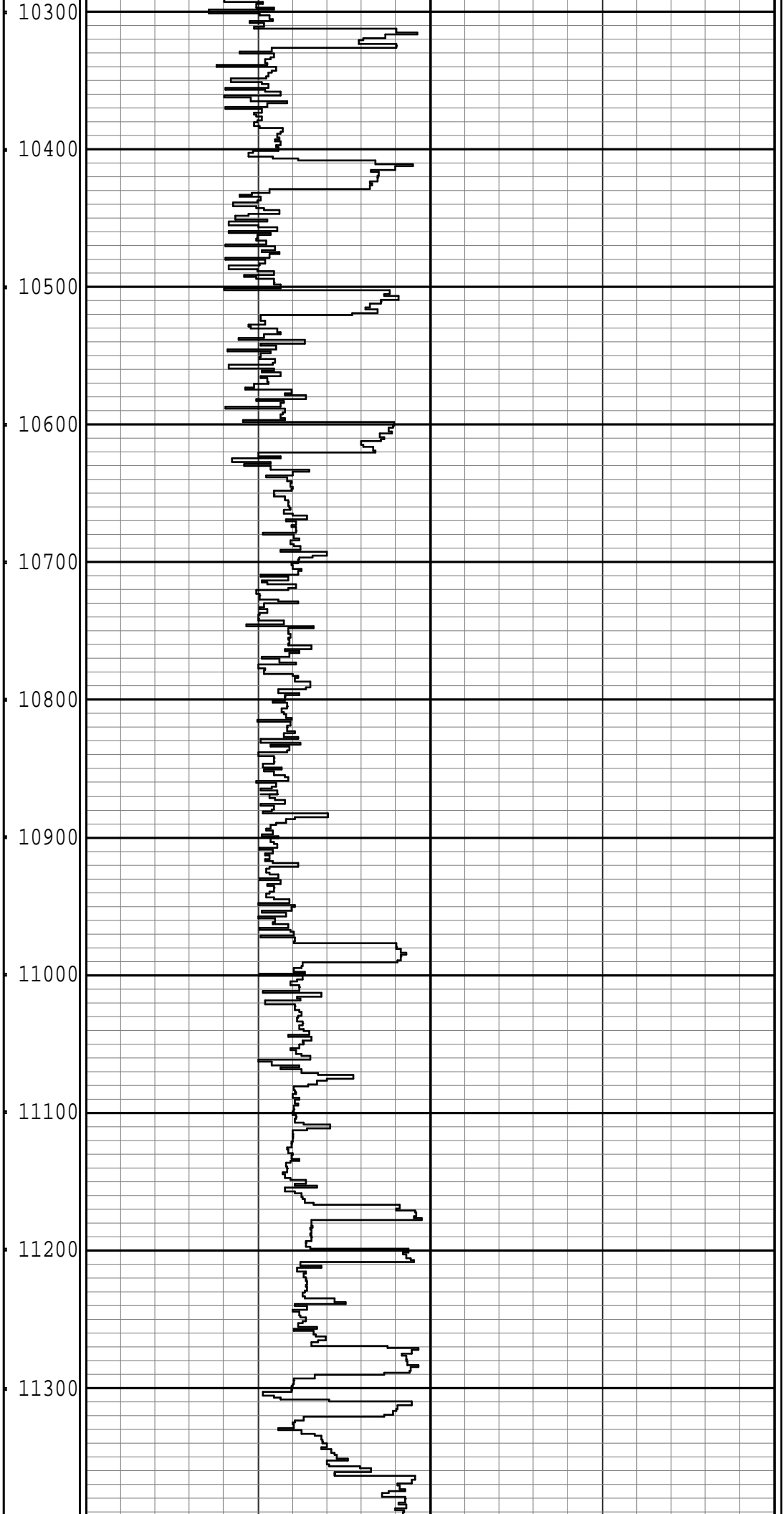
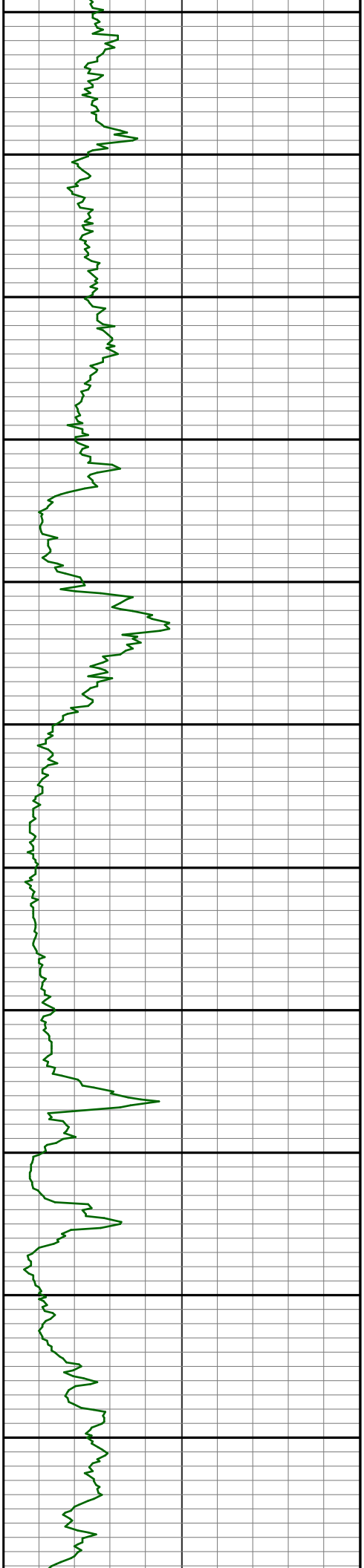


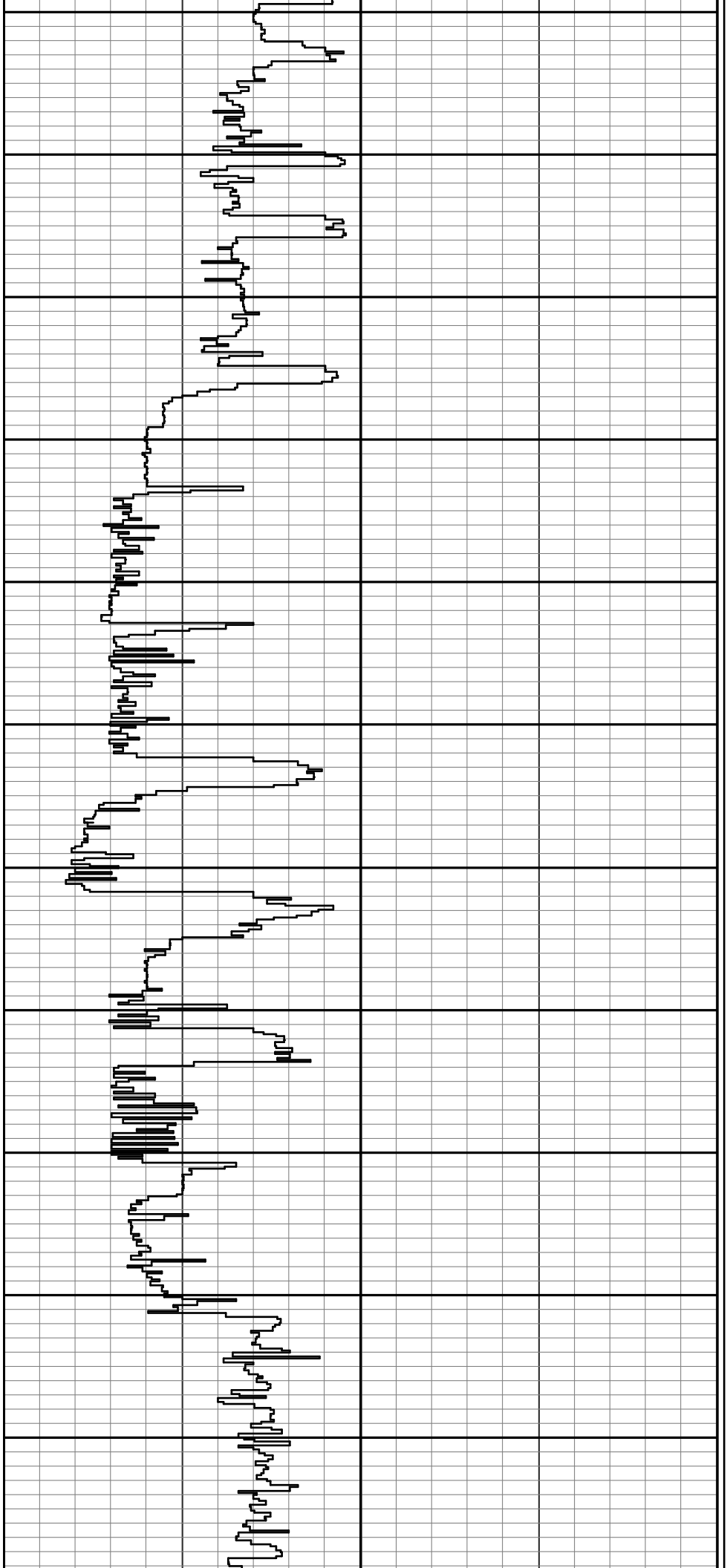
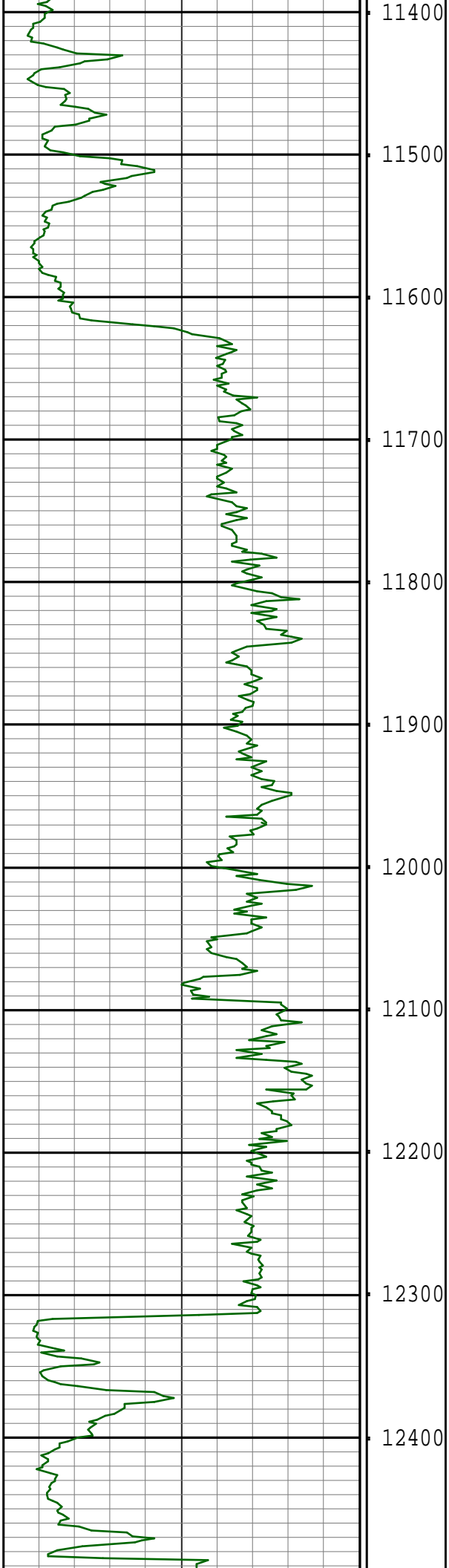


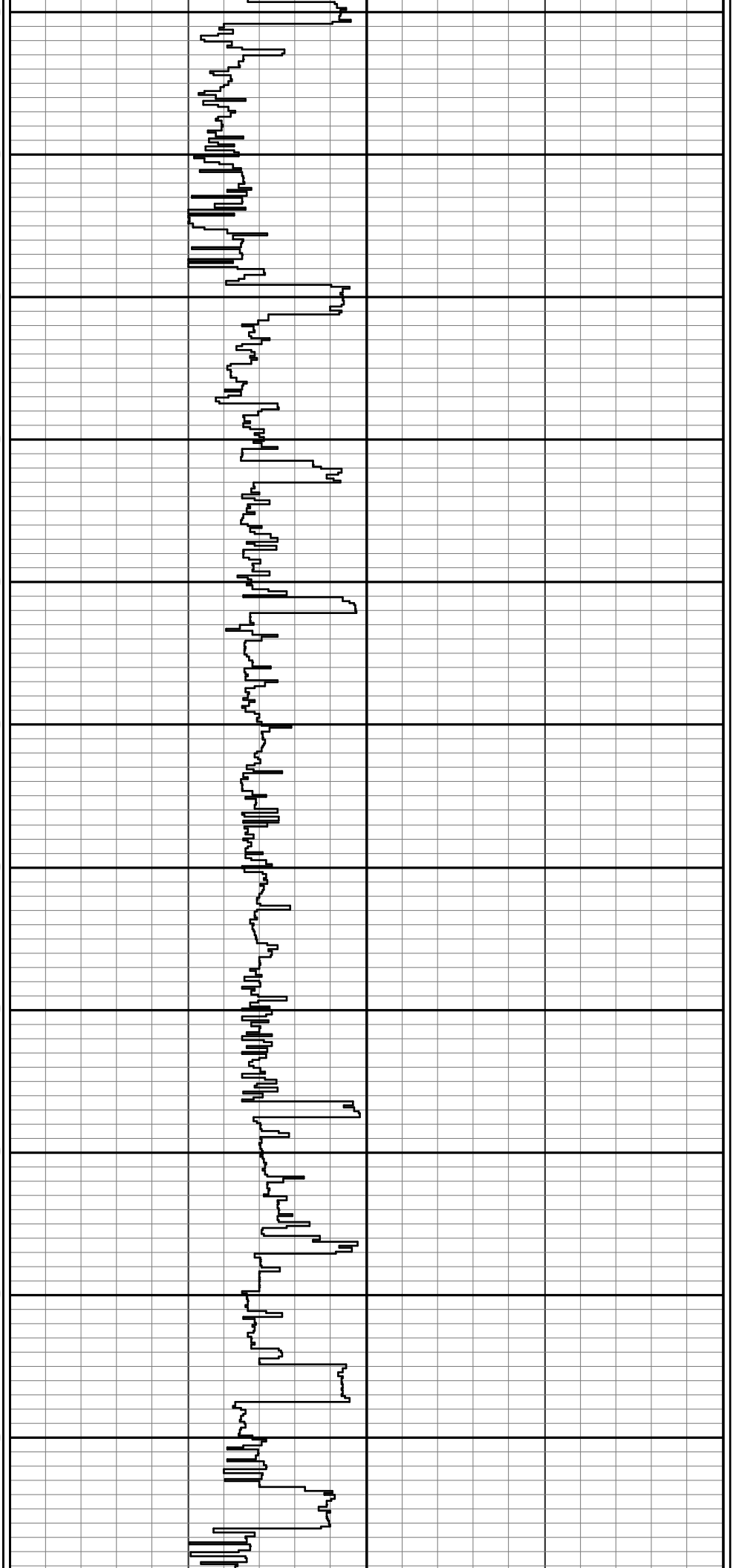
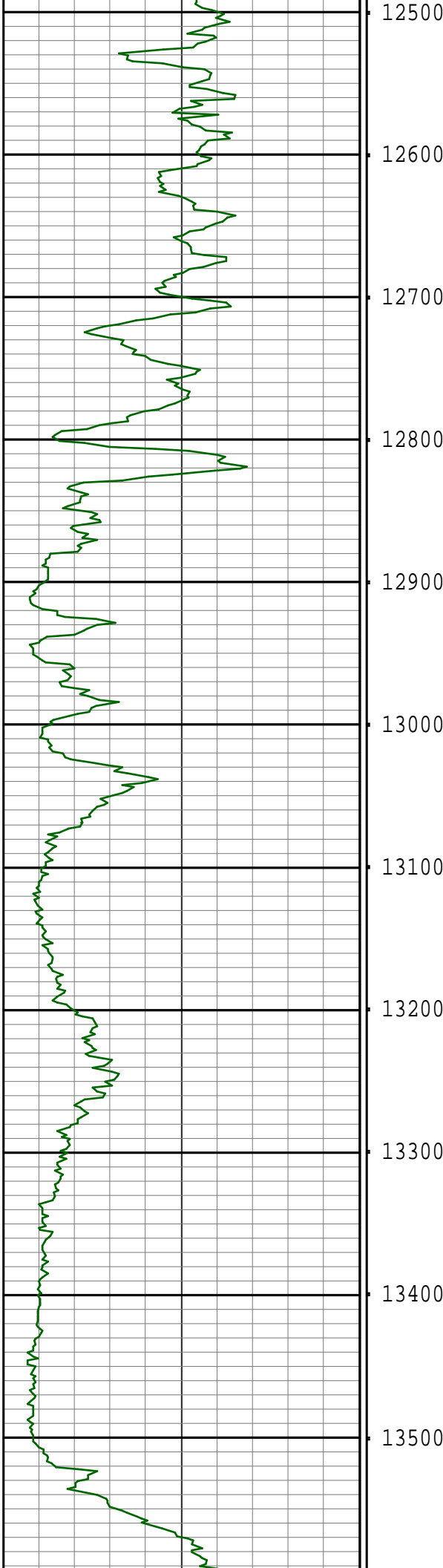


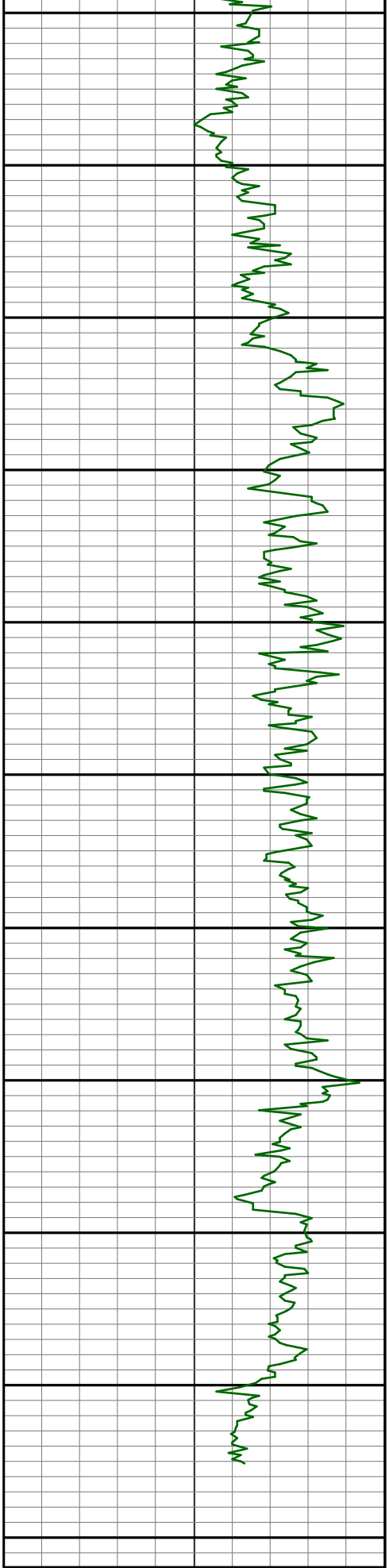






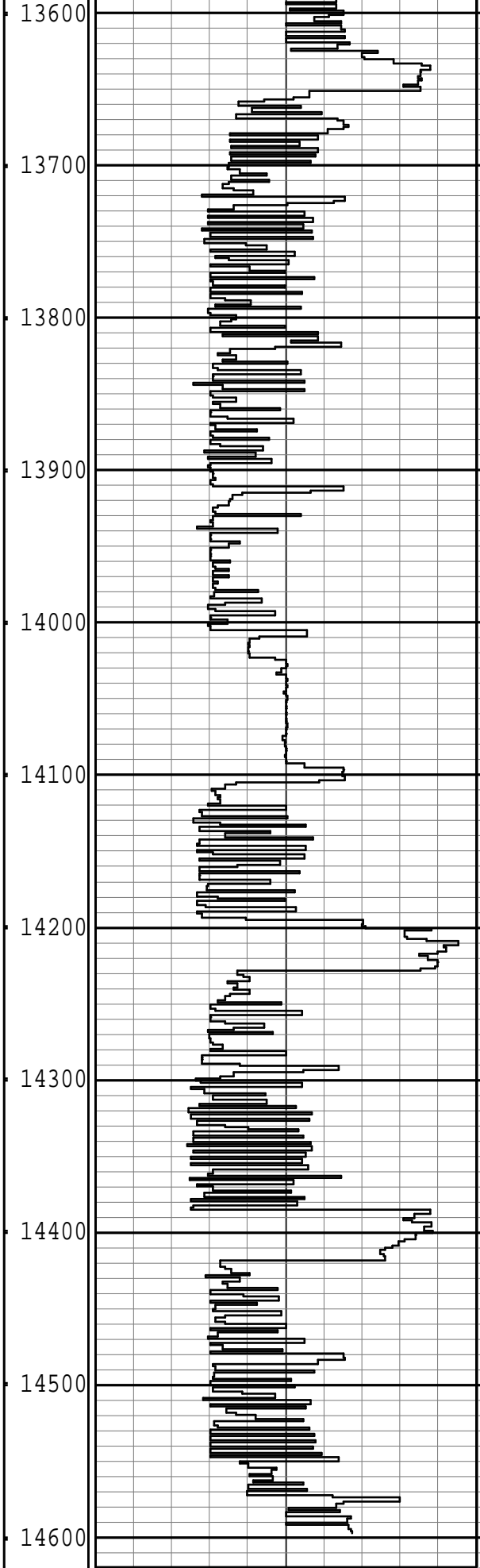






0 GRC API 150

0 GRC API 150



500 ROP ft/hr 0

1" = 100ft  
avg = 2 ft

COMMENTS

avg = 2 ft

SHALES

## Survey Report

Vertical Section Plane: 1.23°

Total Correction: 7.70° East to True

Calculation Method: Minimum Curvature

Survey Reference: Wellhead

North Aligned to: True North

Well: OSCAR Y10-72-1HC

RT: 24' ROTARY TABLE TO GROUND LEVEL

FIELD: WATTENBERG

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
ORIGIN OF WELL AT SURFACE											
0.00	0.00	0.00	0.00		0.00	0.00 N	0.00 E	0.00	0.00		
THE FOLLOWING ARE THIRD PARTY SURVEYS											
290.00	0.40	289.90	290.00	290.00	0.32	0.34 N	0.95 W	1.01	289.90	0.14	
596.00	0.20	278.70	595.99	306.00	0.74	0.79 N	2.48 W	2.61	287.62	0.07	
878.00	0.20	324.50	877.99	282.00	1.19	1.26 N	3.26 W	3.49	291.21	0.06	
1128.00	0.30	327.90	1127.99	250.00	2.09	2.17 N	3.86 W	4.43	299.40	0.04	
THE FOLLOWING ARE PATHFINDER MWD SURVEYS											
1206.00	0.79	276.26	1205.99	78.00	2.31	2.41 N	4.50 W	5.10	298.12	0.83	64.88
1300.00	0.79	297.94	1299.98	94.00	2.66	2.78 N	5.72 W	6.36	295.93	0.32	68.50
1394.00	0.53	315.72	1393.97	94.00	3.25	3.39 N	6.59 W	7.42	297.24	0.35	68.50
1489.00	2.37	73.82	1488.95	95.00	4.15	4.26 N	5.01 W	6.58	310.33	2.80	72.11
1584.00	3.61	54.24	1583.82	95.00	6.54	6.55 N	0.70 W	6.59	353.90	1.67	72.11
1678.00	5.19	54.25	1677.54	94.00	10.87	10.77 N	5.15 E	11.94	25.58	1.68	75.72
1773.00	7.12	46.17	1771.99	95.00	17.63	17.35 N	12.89 E	21.62	36.60	2.22	75.72
1866.00	8.09	49.15	1864.17	93.00	26.09	25.63 N	22.00 E	33.77	40.64	1.13	79.34
1961.00	9.50	49.62	1958.05	95.00	35.78	35.08 N	33.02 E	48.18	43.27	1.49	82.95
2056.00	10.82	48.28	2051.56	95.00	47.06	46.09 N	45.65 E	64.87	44.73	1.41	82.95
2150.00	10.90	46.41	2143.87	94.00	59.34	58.09 N	58.68 E	82.57	45.29	0.38	86.57
2243.00	11.87	38.67	2235.05	93.00	73.13	71.62 N	71.02 E	100.87	44.76	1.94	86.57
2337.00	11.34	39.92	2327.13	94.00	88.02	86.26 N	82.99 E	119.70	43.89	0.62	90.18
2431.00	11.52	38.84	2419.26	94.00	102.67	100.66 N	94.81 E	138.28	43.29	0.30	90.18
2524.00	11.70	37.69	2510.36	93.00	117.61	115.35 N	106.40 E	156.93	42.69	0.32	93.80
2619.00	11.52	37.12	2603.42	95.00	133.04	130.54 N	118.01 E	175.98	42.12	0.23	93.80
2713.00	10.82	36.81	2695.63	94.00	147.82	145.09 N	128.96 E	194.12	41.63	0.75	97.41
2808.00	10.46	34.41	2789.00	95.00	162.29	159.34 N	139.18 E	211.57	41.14	0.60	97.41
2902.00	10.55	34.65	2881.43	94.00	176.62	173.46 N	148.90 E	228.60	40.64	0.11	101.02
2997.00	10.55	35.31	2974.82	95.00	191.08	187.71 N	158.87 E	245.92	40.24	0.13	101.02
3092.00	10.55	35.79	3068.21	95.00	205.44	201.86 N	168.98 E	263.25	39.93	0.09	101.02
3187.00	10.90	35.31	3161.55	95.00	220.05	216.25 N	179.26 E	280.88	39.66	0.38	104.64
3282.00	9.85	35.15	3255.00	95.00	234.23	230.22 N	189.13 E	297.95	39.40	1.11	104.64
3376.00	10.11	34.92	3347.58	94.00	247.77	243.56 N	198.48 E	314.19	39.18	0.28	104.64
3471.00	9.67	32.42	3441.17	95.00	261.53	257.13 N	207.53 E	330.43	38.91	0.65	108.25
3566.00	8.88	33.06	3534.92	95.00	274.58	270.01 N	215.81 E	345.66	38.63	0.84	108.25
3660.00	8.71	32.34	3627.82	94.00	286.84	282.11 N	223.57 E	359.96	38.40	0.21	108.25
3755.00	8.27	32.01	3721.78	95.00	298.87	293.98 N	231.04 E	373.90	38.16	0.47	111.87
3850.00	8.09	32.03	3815.81	95.00	310.48	305.44 N	238.21 E	387.35	37.95	0.19	111.87
3945.00	7.56	31.26	3909.93	95.00	321.63	316.45 N	245.00 E	400.20	37.75	0.57	115.48
4039.00	8.00	31.22	4003.06	94.00	332.65	327.33 N	251.60 E	412.85	37.55	0.47	115.48
4134.00	8.71	29.16	4097.05	95.00	344.73	339.26 N	258.53 E	426.54	37.31	0.81	115.48
4229.00	7.83	25.73	4191.06	95.00	356.98	351.37 N	264.84 E	440.01	37.01	1.06	115.48
4324.00	6.77	19.15	4285.29	95.00	368.19	362.49 N	269.49 E	451.69	36.63	1.42	115.48
4419.00	5.36	356.59	4379.77	95.00	377.95	372.21 N	271.06 E	460.45	36.06	2.89	119.09
4513.00	2.55	334.57	4473.54	94.00	384.19	378.49 N	269.90 E	464.87	35.49	3.34	122.71
4608.00	1.14	38.70	4568.50	95.00	386.83	381.13 N	269.59 E	466.84	35.27	2.42	122.71
4702.00	0.70	124.84	4662.49	94.00	387.26	381.54 N	270.64 E	467.78	35.35	1.38	122.71
4797.00	0.53	157.06	4757.49	95.00	386.53	380.80 N	271.29 E	467.55	35.47	0.40	122.71
4892.00	0.70	194.74	4852.48	95.00	385.57	379.83 N	271.31 E	466.78	35.54	0.45	122.71
5081.00	0.70	234.41	5041.47	189.00	383.76	378.04 N	270.08 E	464.61	35.54	0.25	126.32
5270.00	1.06	241.80	5230.44	189.00	382.20	376.55 N	267.60 E	461.95	35.40	0.20	126.32
5365.00	0.88	254.88	5325.43	95.00	381.57	375.94 N	266.12 E	460.60	35.29	0.30	129.94
5460.00	0.70	253.81	5420.42	95.00	381.19	375.59 N	264.86 E	459.59	35.19	0.19	129.94
5554.00	0.70	257.87	5514.42	94.00	380.88	375.31 N	263.75 E	458.71	35.10	0.05	133.55
5649.00	0.79	228.93	5609.41	95.00	380.31	374.76 N	262.69 E	457.65	35.03	0.40	137.17
5838.00	0.97	225.51	5798.39	189.00	378.29	372.78 N	260.56 E	454.82	34.95	0.10	140.78
5933.00	0.97	230.66	5893.37	95.00	377.19	371.71 N	259.37 E	453.25	34.91	0.09	140.78
6028.00	0.53	218.99	5988.36	95.00	376.32	370.85 N	258.47 E	452.04	34.87	0.49	144.39
6123.00	0.62	205.25	6083.36	95.00	375.50	370.05 N	257.97 E	451.09	34.88	0.17	144.39
6217.00	0.70	199.16	6177.35	94.00	374.49	369.05 N	257.57 E	450.04	34.91	0.11	148.01
6312.00	0.88	204.65	6272.34	95.00	373.27	367.83 N	257.07 E	448.76	34.95	0.21	148.01
6407.00	0.79	202.40	6367.33	95.00	371.99	366.57 N	256.52 E	447.41	34.98	0.10	151.62
6502.00	1.49	7.43	6462.32	95.00	372.61	367.19 N	256.43 E	447.86	34.93	2.38	148.01
6596.00	7.21	356.78	6556.02	94.00	379.71	374.29 N	256.26 E	453.61	34.40	6.12	155.24
6691.00	13.81	1.05	6649.37	95.00	397.01	391.60 N	256.13 E	467.92	33.19	6.99	155.24
6785.00	19.26	7.04	6739.46	94.00	423.67	418.23 N	258.24 E	491.53	31.69	6.07	158.85
6880.00	27.52	5.38	6826.58	95.00	461.22	455.69 N	262.22 E	525.75	29.92	8.72	144.39
6975.00	40.89	1.75	6904.97	95.00	514.45	508.87 N	265.24 E	573.85	27.53	14.23	151.62
7069.00	57.42	0.09	6966.24	94.00	585.30	579.72 N	266.25 E	637.94	24.67	17.63	155.24
7164.00	68.24	359.98	7009.56	95.00	669.68	664.11 N	266.30 E	715.51	21.85	11.39	155.24
7259.00	76.94	359.86	7037.95	95.00	760.21	754.67 N	266.17 E	800.24	19.43	9.16	162.46
7354.00	86.00	359.95	7052.03	95.00	854.04	848.53 N	266.02 E	889.25	17.41	9.54	166.08



Survey Report											
Vertical Section Plane: 1.23°						Total Correction: 7.70° East to True					
Calculation Method: Minimum Curvature						Survey Reference: Wellhead					
North Aligned to: True North						Well: OSCAR Y10-72-1HC					
RT: 24' ROTARY TABLE TO GROUND LEVEL						FIELD: WATTENBERG					
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
7410.00	88.64	359.26	7054.65	56.00	909.95	904.46 N	265.63 E	942.66	16.37	4.87	166.08
7516.00	92.07	358.54	7053.99	106.00	1015.84	1010.42 N	263.60 E	1044.24	14.62	3.31	
7611.00	93.65	356.68	7049.25	95.00	1110.53	1105.21 N	259.64 E	1135.30	13.22	2.57	169.69
7706.00	92.33	356.51	7044.30	95.00	1205.09	1199.91 N	254.01 E	1226.50	11.95	1.40	176.92
7800.00	91.01	357.42	7041.56	94.00	1298.78	1293.74 N	249.03 E	1317.49	10.90	1.71	176.92
7895.00	90.92	358.81	7039.96	95.00	1393.63	1388.67 N	245.91 E	1410.27	10.04	1.47	184.15
7989.00	92.24	359.20	7037.36	94.00	1487.52	1482.62 N	244.28 E	1502.61	9.36	1.46	187.76
8084.00	90.75	0.05	7034.89	95.00	1582.45	1577.58 N	243.65 E	1596.28	8.78	1.81	187.76
8178.00	89.16	0.45	7034.96	94.00	1676.43	1671.58 N	244.06 E	1689.30	8.31	1.74	191.38
8273.00	88.46	359.91	7036.93	95.00	1771.39	1766.55 N	244.36 E	1783.37	7.88	0.93	194.99
8367.00	89.25	359.58	7038.81	94.00	1865.34	1860.53 N	243.94 E	1876.46	7.47	0.91	194.99
8461.00	87.32	359.06	7041.62	94.00	1959.24	1954.48 N	242.83 E	1969.51	7.08	2.13	191.38
8555.00	88.11	358.42	7045.37	94.00	2053.08	2048.38 N	240.76 E	2062.48	6.70	1.08	198.61
8650.00	88.72	357.90	7048.00	95.00	2147.90	2143.30 N	237.71 E	2156.44	6.33	0.84	202.22
8744.00	90.84	358.43	7048.36	94.00	2241.76	2237.24 N	234.71 E	2249.52	5.99	2.32	205.83
8839.00	91.63	358.99	7046.31	95.00	2336.65	2332.19 N	232.57 E	2343.76	5.69	1.02	205.83
8933.00	90.66	358.87	7044.44	94.00	2430.55	2426.16 N	230.81 E	2437.11	5.43	1.04	205.83
9027.00	88.99	359.94	7044.72	94.00	2524.50	2520.15 N	229.84 E	2530.61	5.21	2.11	205.83
9122.00	90.48	359.83	7045.16	95.00	2619.47	2615.14 N	229.64 E	2625.21	5.02	1.57	213.06
9217.00	89.34	1.88	7045.31	95.00	2714.46	2710.13 N	231.06 E	2719.96	4.87	2.47	213.06
9310.00	88.46	2.65	7047.10	93.00	2807.43	2803.03 N	234.74 E	2812.85	4.79	1.26	213.06
9404.00	87.23	2.64	7050.63	94.00	2901.33	2896.87 N	239.07 E	2906.71	4.72	1.31	213.06
9497.00	87.93	2.16	7054.56	93.00	2994.23	2989.70 N	242.96 E	2999.56	4.65	0.91	216.68
9591.00	88.64	2.39	7057.37	94.00	3088.17	3083.58 N	246.69 E	3093.44	4.57	0.79	220.29
9684.00	90.57	0.52	7058.01	93.00	3181.16	3176.54 N	249.05 E	3186.29	4.48	2.89	220.29
9779.00	91.80	359.97	7056.05	95.00	3276.12	3271.52 N	249.46 E	3281.02	4.36	1.42	223.91
9874.00	90.22	358.97	7054.37	95.00	3371.06	3366.50 N	248.58 E	3375.66	4.22	1.97	220.29
9968.00	89.69	359.29	7054.45	94.00	3464.99	3460.49 N	247.15 E	3469.30	4.09	0.66	223.91
10063.00	88.99	358.16	7055.54	95.00	3559.89	3555.45 N	245.04 E	3563.89	3.94	1.40	223.91
10157.00	89.25	356.76	7056.98	94.00	3653.68	3649.35 N	240.87 E	3657.29	3.78	1.51	227.52
10252.00	90.31	356.64	7057.35	95.00	3748.38	3744.19 N	235.41 E	3751.58	3.60	1.12	231.13
10347.00	91.28	356.71	7056.03	95.00	3843.07	3839.02 N	229.90 E	3845.90	3.43	1.02	223.91
10441.00	89.60	357.50	7055.31	94.00	3936.82	3932.89 N	225.15 E	3939.33	3.28	1.98	227.52
10536.00	89.87	359.75	7055.75	95.00	4031.71	4027.86 N	222.87 E	4034.02	3.17	2.39	227.52
10631.00	87.58	359.99	7057.86	95.00	4126.66	4122.83 N	222.65 E	4128.83	3.09	2.42	227.52
10726.00	88.29	359.72	7061.29	95.00	4221.57	4217.76 N	222.41 E	4223.62	3.02	0.80	231.13
10820.00	89.08	359.92	7063.44	94.00	4315.51	4311.74 N	222.12 E	4317.45	2.95	0.87	231.13
10914.00	90.31	359.50	7063.94	94.00	4409.48	4405.73 N	221.64 E	4411.30	2.88	1.38	227.52
11009.00	90.57	357.49	7063.21	95.00	4504.36	4500.69 N	219.15 E	4506.02	2.79	2.13	231.13
11104.00	91.36	356.95	7061.61	95.00	4599.11	4595.57 N	214.54 E	4600.57	2.67	1.01	231.13
11198.00	90.66	357.64	7059.96	94.00	4692.88	4689.45 N	210.11 E	4694.15	2.57	1.05	231.13
11293.00	90.40	359.02	7059.08	95.00	4787.75	4784.40 N	207.34 E	4788.89	2.48	1.48	231.13
11387.00	85.65	359.53	7062.32	94.00	4881.61	4878.31 N	206.15 E	4882.66	2.42	5.08	231.13
11482.00	84.77	359.02	7070.25	95.00	4976.22	4972.97 N	204.95 E	4977.19	2.36	1.07	231.13
11577.00	88.81	358.81	7075.57	95.00	5070.98	5067.78 N	203.16 E	5071.85	2.30	4.26	231.13
11672.00	89.69	358.51	7076.81	95.00	5165.87	5162.75 N	200.93 E	5166.65	2.23	0.98	231.13
11766.00	90.40	358.23	7076.74	94.00	5259.75	5256.71 N	198.26 E	5260.45	2.16	0.81	234.75
11861.00	91.54	358.30	7075.13	95.00	5354.61	5351.65 N	195.38 E	5355.21	2.09	1.20	231.13
11955.00	90.48	358.60	7073.47	94.00	5448.48	5445.60 N	192.84 E	5449.01	2.03	1.17	234.75
12050.00	89.60	358.81	7073.41	95.00	5543.39	5540.57 N	190.70 E	5543.85	1.97	0.95	234.75
12144.00	89.16	1.13	7074.42	94.00	5637.36	5634.56 N	190.65 E	5637.79	1.94	2.51	234.75
12239.00	89.52	1.10	7075.52	95.00	5732.35	5729.54 N	192.49 E	5732.77	1.92	0.38	238.36
12334.00	90.04	0.74	7075.88	95.00	5827.35	5824.52 N	194.02 E	5827.75	1.91	0.67	238.36
12429.00	91.10	1.15	7074.94	95.00	5922.34	5919.50 N	195.59 E	5922.73	1.89	1.20	241.98
12524.00	90.57	0.53	7073.55	95.00	6017.33	6014.48 N	196.98 E	6017.71	1.88	0.86	234.75
12619.00	91.01	0.40	7072.24	95.00	6112.31	6109.47 N	197.75 E	6112.67	1.85	0.48	231.13
12713.00	89.16	0.35	7072.10	94.00	6206.29	6203.46 N	198.36 E	6206.64	1.83	1.97	238.36
12808.00	88.90	0.34	7073.71	95.00	6301.27	6298.45 N	198.94 E	6301.59	1.81	0.27	238.36
12903.00	88.72	358.82	7075.68	95.00	6396.21	6393.42 N	198.24 E	6396.50	1.78	1.61	238.36
12997.00	88.81	358.02	7077.71	94.00	6490.07	6487.36 N	195.65 E	6490.31	1.73	0.86	238.36
13092.00	89.60	357.92	7079.03	95.00	6584.91	6582.30 N	192.28 E	6585.10	1.67	0.84	241.98
13187.00	90.57	357.89	7078.89	95.00	6679.74	6677.23 N	188.81 E	6679.90	1.62	1.02	245.59
13281.00	90.57	357.79	7077.95	94.00	6773.58	6771.16 N	185.27 E	6773.69	1.57	0.11	241.98
13376.00	91.19	358.45	7076.49	95.00	6868.42	6866.10 N	182.15 E	6868.51	1.52	0.95	241.98
13471.00	90.66	359.75	7074.96	95.00	6963.34	6961.07 N	180.66 E	6963.41	1.49	1.48	238.36
13565.00	89.25	0.56	7075.03	94.00	7057.32	7055.06 N	180.92 E	7057.38	1.47	1.73	241.98
13660.00	87.05	358.34	7078.10	95.00	7152.22	7150.00 N	180.01 E	7152.27	1.44	3.29	241.98
13755.00	87.14	357.07	7082.92	95.00	7246.91	7244.80 N	176.21 E	7246.94	1.39	1.34	245.59
13850.00	88.64	357.56	7086.41	95.00	7341.62	7339.63 N	171.76 E	7341.64	1.34	1.66	245.59
13945.00	89.60	358.23	7087.87	95.00	7436.45	7434.55 N	168.27 E	7436.46	1.30	1.23	238.36
14039.00	89.96	357.83	7088.23	94.00	7530.30	7528.50 N	165.04 E	7530.30	1.26	0.57	245.59

Vertical Section Plane: 1.23°						Total Correction: 7.70° East to True					
Calculation Method: Minimum Curvature						Survey Reference: Wellhead					
North Aligned to: True North						Well: OSCAR Y10-72-1HC					
RT: 24' ROTARY TABLE TO GROUND LEVEL						FIELD: WATTENBERG					
Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	Rect Co-ord North (ft)	Rect Co-ord East (ft)	Closure Distance (ft)	Closure Direction (deg)	Dog-leg Severity (dg/hft)	Temp (deg F)
14134.00	90.40	357.05	7087.94	95.00	7625.09	7623.40 N	160.80 E	7625.09	1.21	0.94	245.59
14229.00	90.22	358.74	7087.42	95.00	7719.93	7718.33 N	157.31 E	7719.93	1.17	1.79	245.59
14323.00	91.01	358.19	7086.41	94.00	7813.81	7812.29 N	154.79 E	7813.82	1.14	1.02	245.59
14418.00	90.57	0.84	7085.10	95.00	7908.75	7907.27 N	153.98 E	7908.77	1.12	2.83	245.59
14513.00	91.45	0.89	7083.43	95.00	8003.73	8002.24 N	155.42 E	8003.75	1.11	0.93	249.20
14537.00	91.63	0.89	7082.78	24.00	8027.72	8026.23 N	155.79 E	8027.74	1.11	0.75	249.20
STRAIGHT LINE PROJECTION TO BIT.											
14600.00	91.63	0.89	7080.99	63.00	8090.70	8089.20 N	156.77 E	8090.72	1.11	0.00	

BOTTOM HOLE ASSEMBLY RECORD										
RUN #1		ft	RUN #2		ft	RUN #3		ft		
8.75" PDC BIT		0.70	8.75" PDC BIT		0.66	6.125" PDC BIT		0.60		
1.75 MUD MOTOR		26.19	2.25 MUD MOTOR		25.23	1.5 MUD MOTOR		26.81		
NM FLOAT SUB		2.27	NM FLOAT SUB		2.27	NM FLOAT SUB		3.50		
NM FLOAT SUB		2.94	NM FLOAT SUB		2.94	ORIENTING SUB		3.19		
ORIENTING SUB		3.30	ORIENTING SUB		3.30	HDS-1R (DIR/GR)		30.57		
HDS-1R (DIR/GR)		29.84	HDS-1R (DIR/GR)		29.84	NMDC		31.11		
NMFC		31.06	NMFC		31.06	NMDC		30.12		
NMFC		31.09	NMFC		31.09	FILTER SUB		2.82		
FILTER SUB		2.68	FILTER SUB		2.68	X/O		3.37		
X/O SUB		2.67	X/O SUB		2.67	HWDP X 1		30.64		
DP X 27		849.58	DP X 27		849.58	REAMER		8.02		
X/O		4.06	X/O		4.06	4" DP X 63		1989.55		
HWDP X 51		1600.82	HWDP X 51		1600.82	AGITATOR		11.45		
						SHOCK SUB		11.13		
						4" DP X 189		5964.22		
						HWDP X 51		1600.82		
TOTAL BHA:		2557.49	TOTAL BHA:		2585.54	TOTAL BHA:		9747.92		
SENSOR OFFSETS:			SENSOR OFFSETS:			SENSOR OFFSETS:				
=====			=====			=====				
GAMMA-RAY		43.51	GAMMA-RAY		41.85	GAMMA-RAY		43.85		
DIRECTIONAL		60.90	DIRECTIONAL		59.25	DIRECTIONAL		61.25		



A Schlumberger Company

GAMMA-RAY

1" = 100'

FEET MD