

Company : NOBLE ENERGY INC
Well : WELLS RANCH AE 19-644
Field : WATTENBERG

Date : 17-Jan-2015
Time : 22:59



A Schlumberger Company

GAMMA-RAY

2" = 100'
FEET TVD

COMPANY : NOBLE ENERGY INC
WELL : WELLS RANCH AE 19-644
FIELD : WATTENBERG
COUNTY : WELD
STATE : CO
COUNTRY : USA
API No. : 05-123-39639

COMPANY : NOBLE ENERGY INC
WELL : WELLS RANCH AE 19-644
FIELD : WATTENBERG
COUNTY : WELD
STATE : CO
COUNTRY : USA
API WELL No. : 05-123-39639

WELL LOCATION

LAT:40°28'10"N LON:104°21'21"
X:3,318,318 Y:1,415,961 NAD83
SEC:24 TWP:6N RANGE:63W

OTHER SERVICES

DIRECTIONAL
ROP

DEPTH REF. : ROTARY TABLE
ELEVATION : 30.00 ft (ROTARY TABLE - GROUND LEVEL)
ALTITUDE : 4786.00 ft (GROUND LEVEL - MEAN SEA LEVEL)

BOREHOLE RECORD

DEVIATION RECORD

HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft
8 3/4	719	7022	00-10	0	2319
6 1/8	7022	11985	10-00	2319	5722
			00-91	5722	7210
			90+/-3	7210	11985

CASING RECORD

CASING SIZE in	FROM ft	TO ft
9 5/8	0	709
7	0	7012

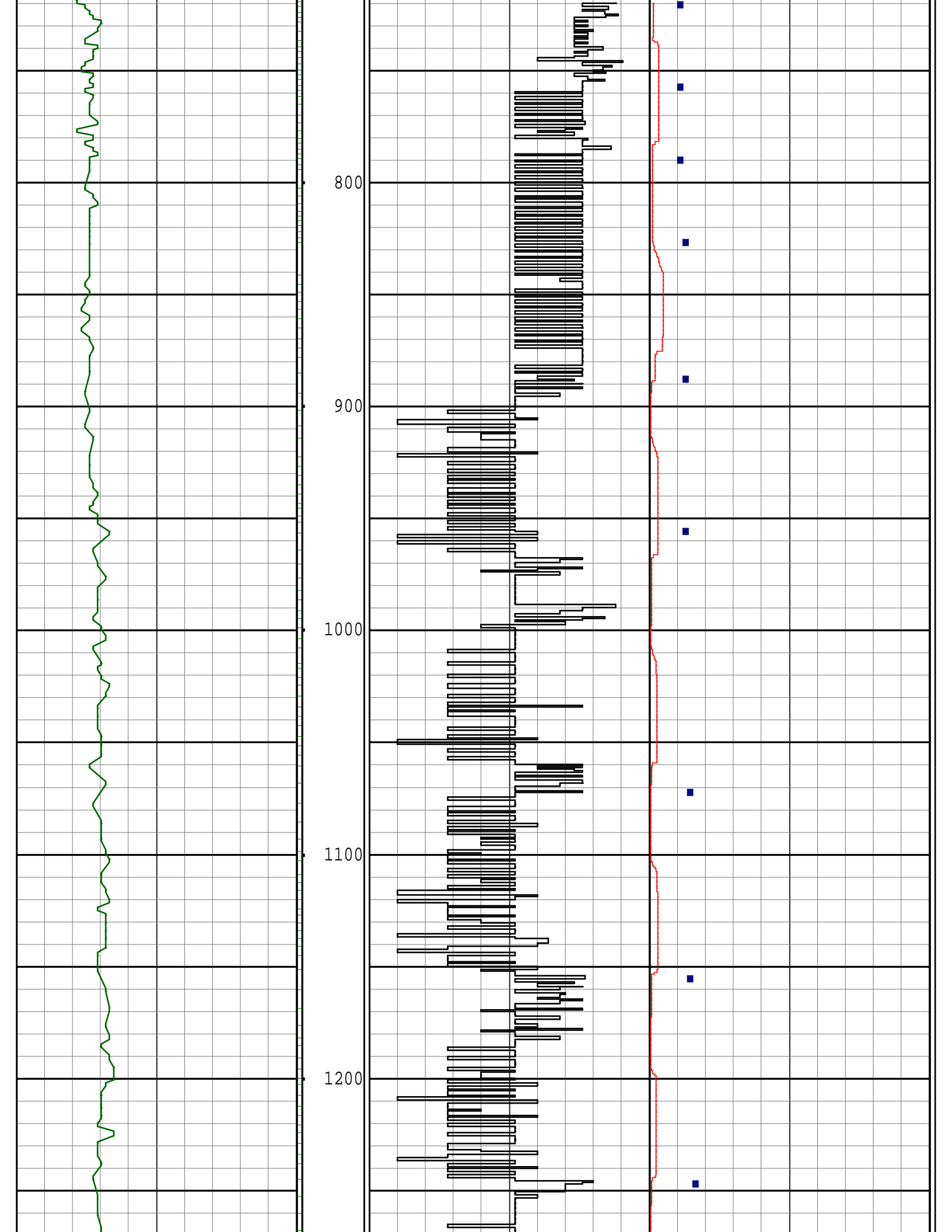
DRILLING Co.: HELMERICH & PAYNE, INC
RIG : 330
LMD UNIT No.: TRAILER DISTRICT : COMMERCE CTY
SPUD DATE : 8-JAN-15
LMD START DATE : 10-JAN-15 DEPTH : 719 ft
LMD END DATE : 16-JAN-15 DEPTH : 11985 ft
TOTAL DEPTH : 11985 ft

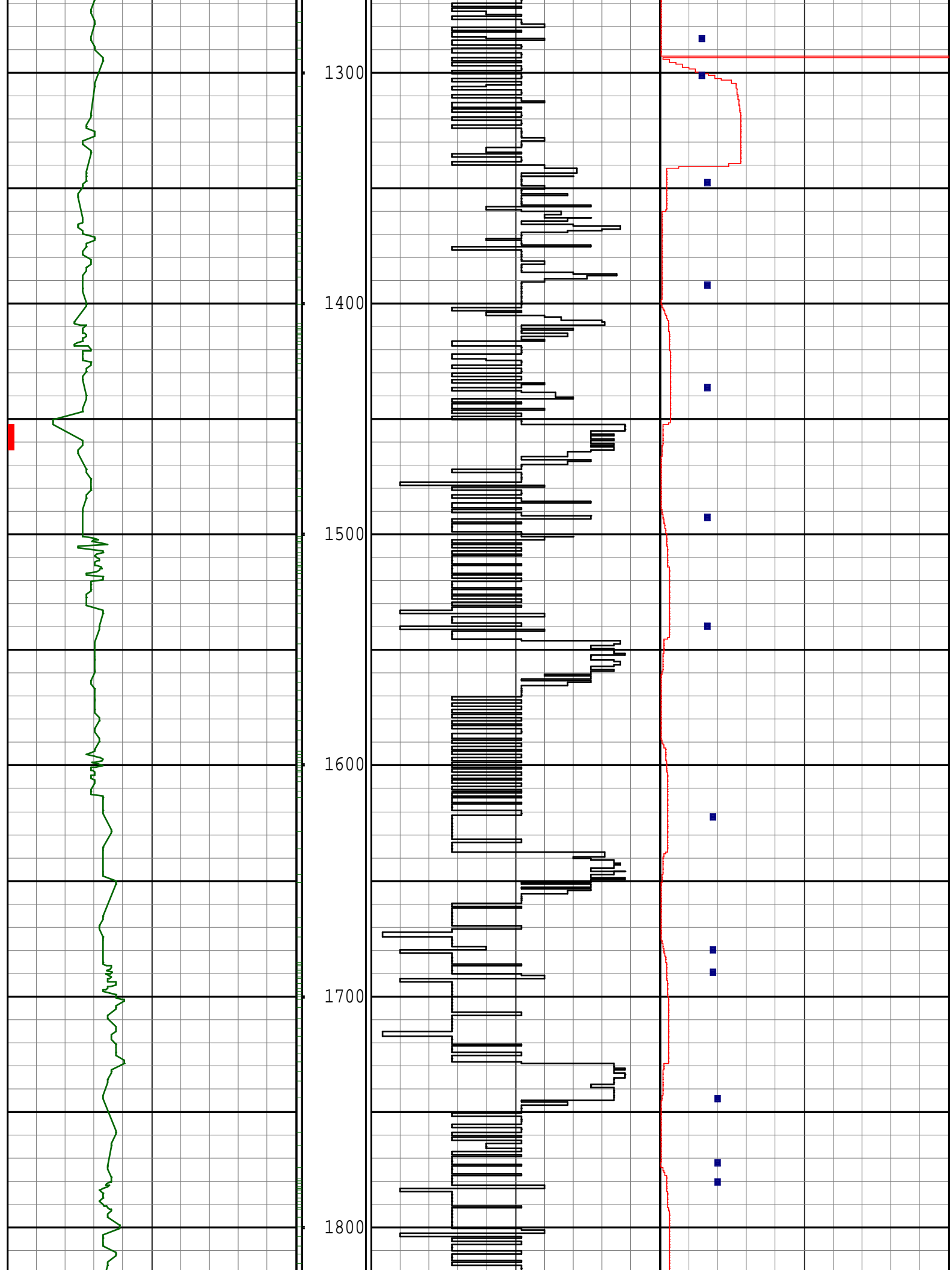
RUN DATA

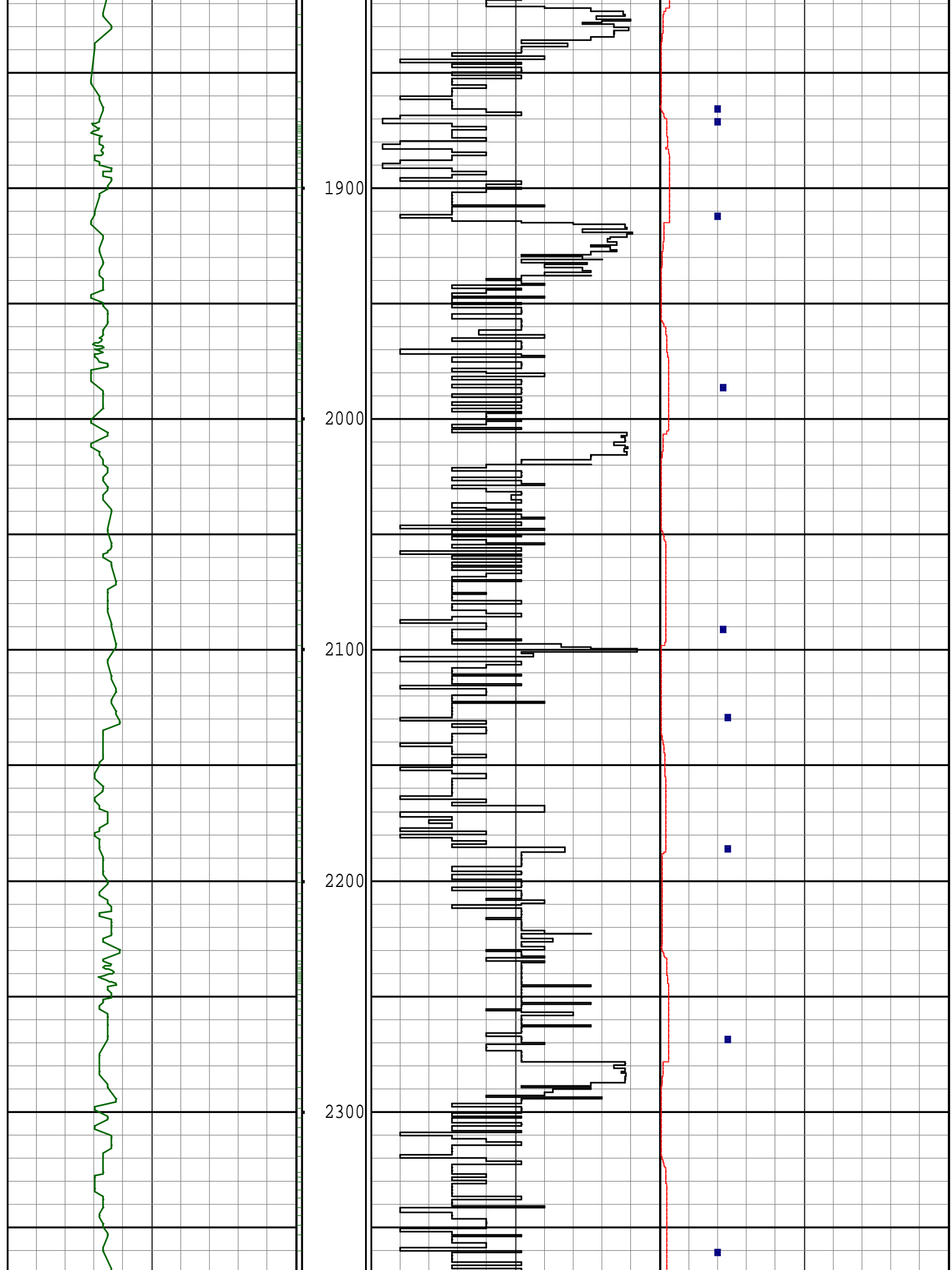
RUN NUMBER	1	2	3			
START DATE	10-JAN-15	12-JAN-15	13-JAN-15			
START TIME	05:00	01:45	23:45			
END DATE	12-JAN-15	13-JAN-15	16-JAN-15			
END TIME	00:00	00:50	06:00			
DEPTH IN ft	719	6331	7022			
DEPTH OUT ft	6331	7022	11985			
LOG TOP ft	709	6287	7012			
LOG BOTTOM ft	6287	6981	11944			
HOLE SIZE in	8 3/4	8 3/4	6 1/8			
MUD DATA @ ft	5312	6761	9250			
MUD TYPE	WATER BASED	WATER BASED	WATER BASED			
DENSITY lb/gal	9.10	10.60	9.70			
VISCOSITY s/qt	44	45	36			
pH	8.5	8.8	9.0			
FLUID LOSS cm3/30	0.0	0.0	0.0			
SALINITY ppm	2400	2000	1800			
Rm ohmm @ deg F	@	@	@			
Rmf ohmm @ deg F	@	@	@			

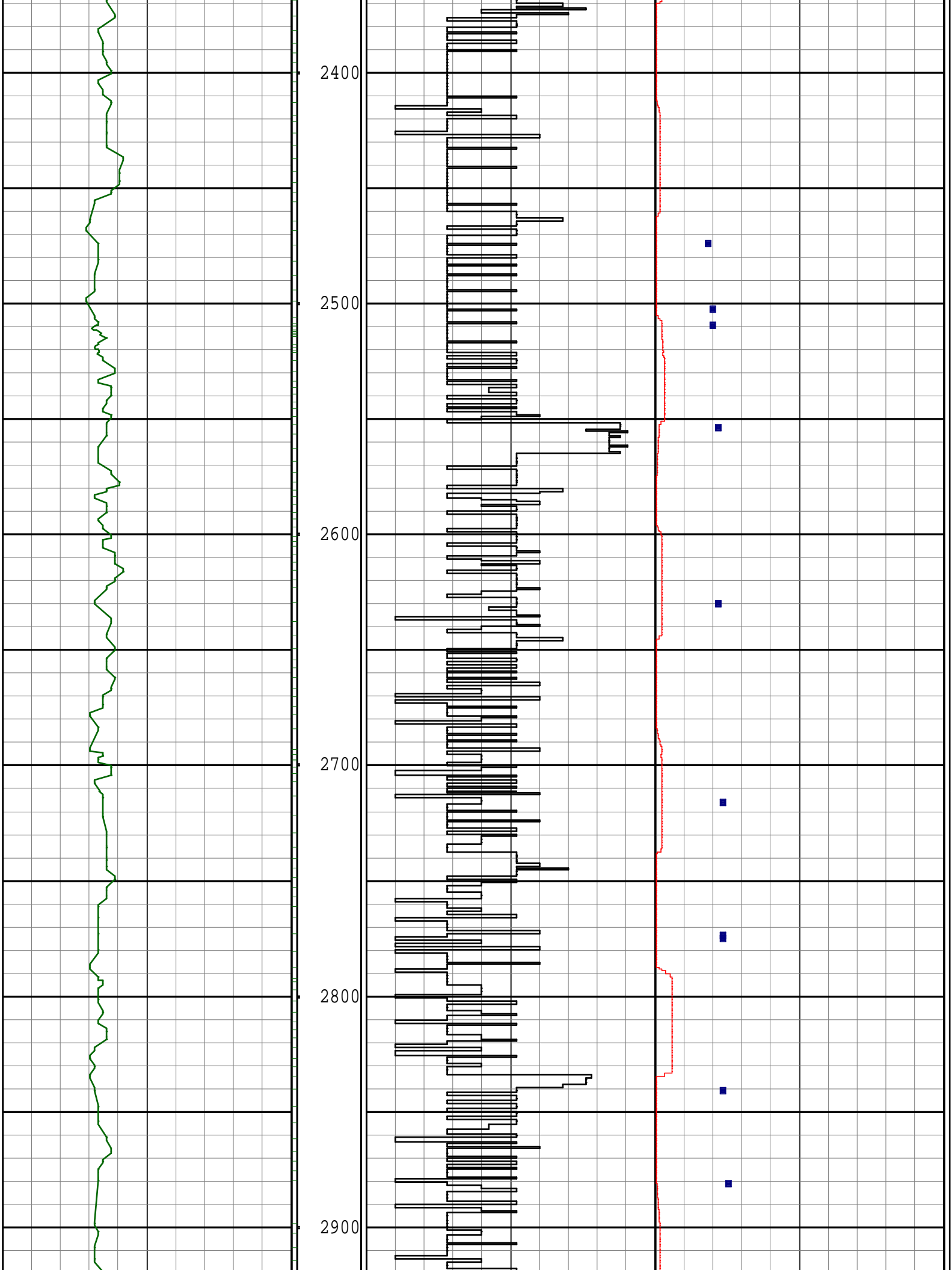
REMARKS
NOBLE ENERGY INC. AFE #:200462
PATHFINDER JOB#: 15CC00124
ALL LOGGING DATA IS TRANSMITTED ONLY UNLESS STATED OTHERWISE.
ALL REFERENCES TO LOG TOP, LOG BOTTOM, OR LOGGING TOOL DEPTH REFER TO
THE GAMMA-RAY SENSOR UNLESS STATED OTHERWISE.
ALL ANNOTATIONS IN THE DEPTH TRACK ARE REFERENCED TO BIT DEPTH.
THIRD PARTY DEPTH TRACKING SERVICES PROVIDED BY PASON.
RUN #1: 6 3/4 HDS-1R/GAMMA LOGGING RUN.
RUN #2: 6 3/4 HDS-1R/GAMMA LOGGING RUN.
RUN #3: 4 3/4 HDS-1R/GAMMA LOGGING RUN.
SEE REMARK#1: GAMMA RAY LOGGED THROUGH CASING FROM 680'-709'MD (679'-708'TVD)
SEE REMARK #2:GAMMA RAY LOGGED THROUGH CASING FROM 6976'-7012'MD (6617'-6618'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 : 17-Jan-2015 22:59

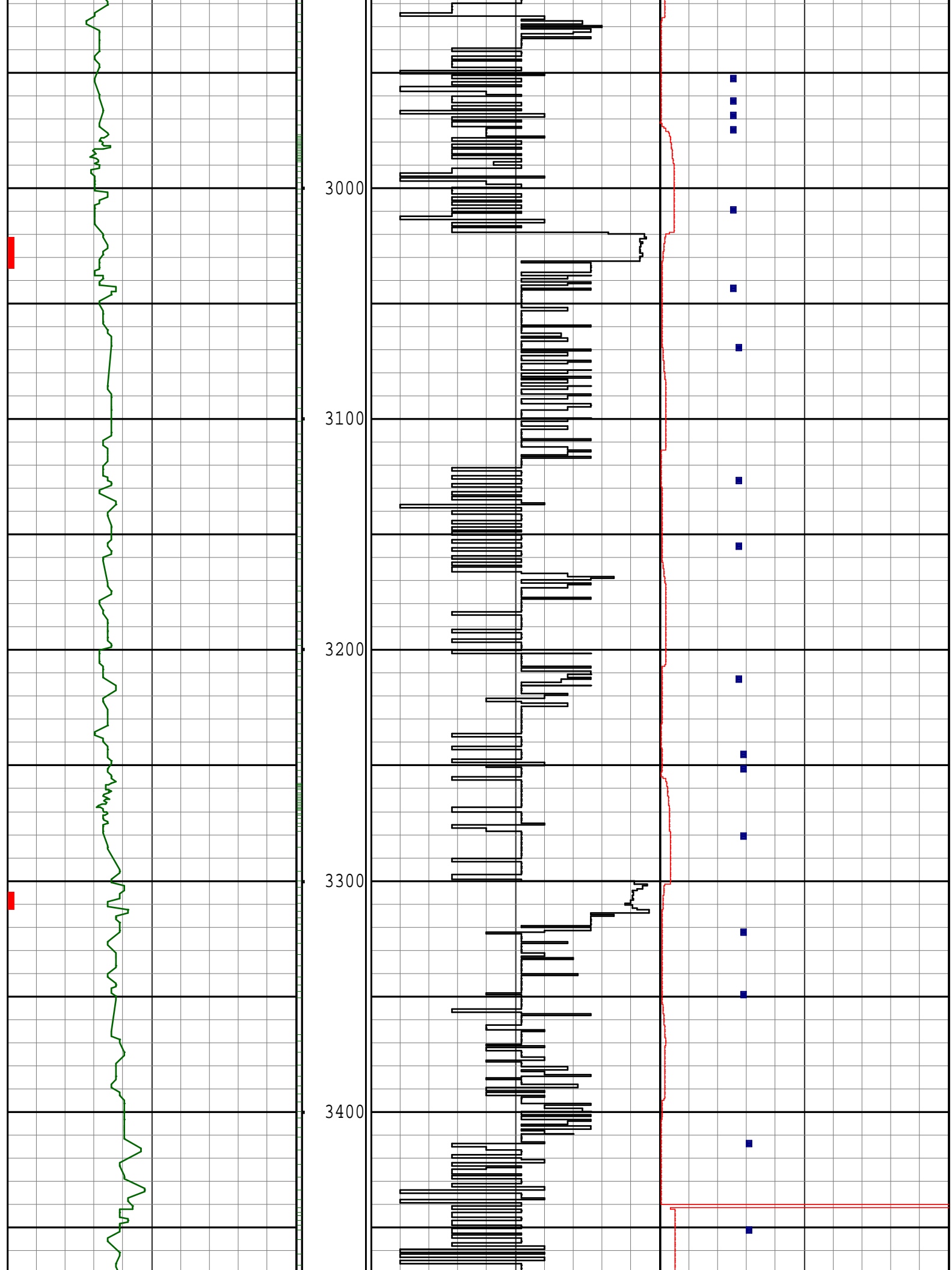
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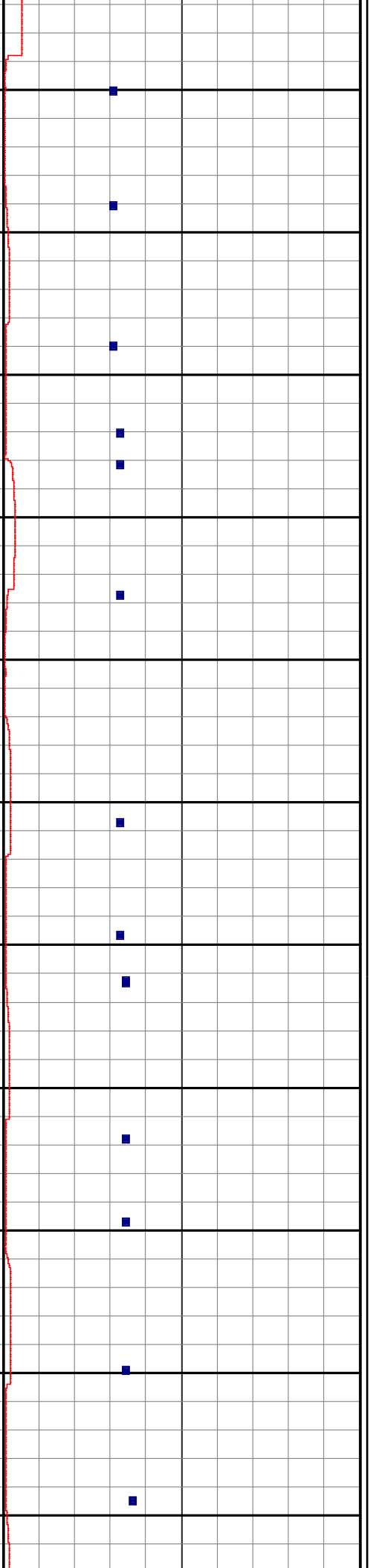
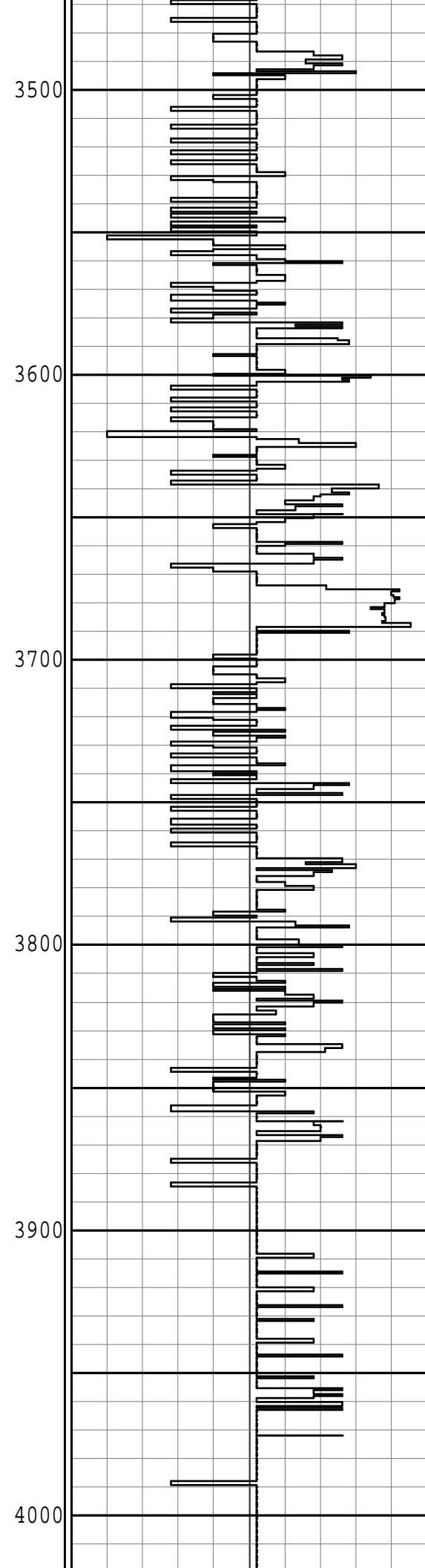
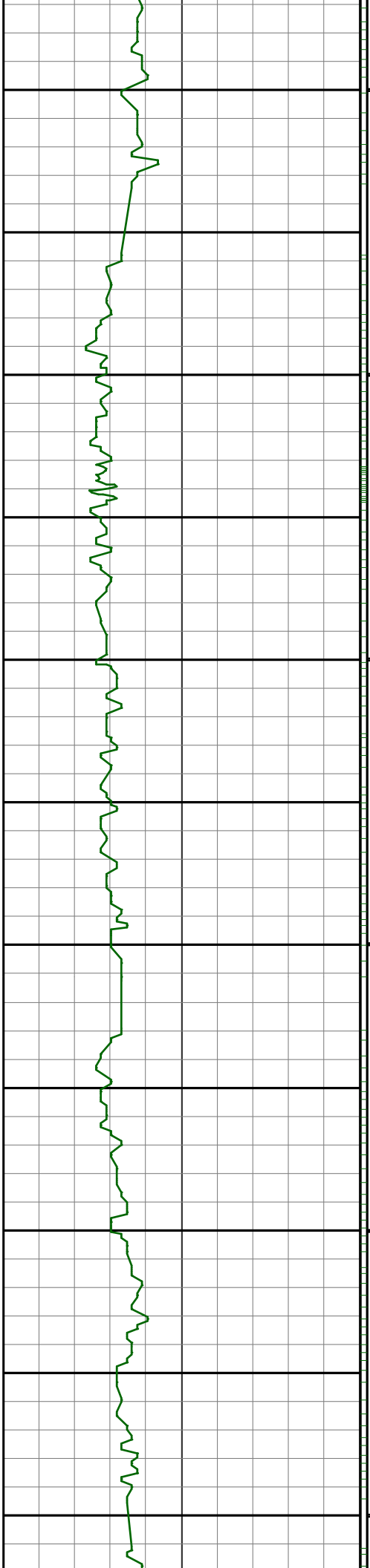


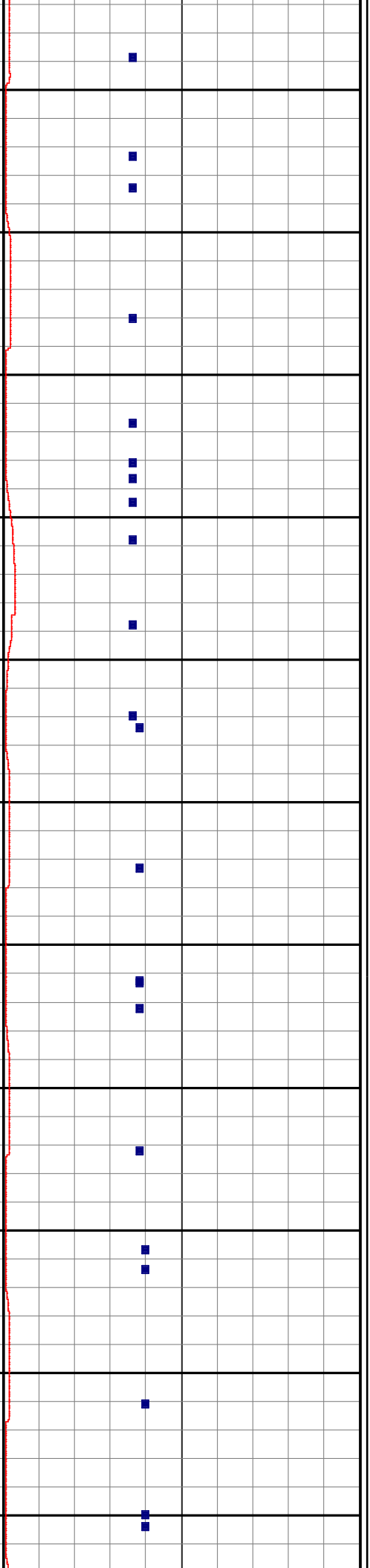
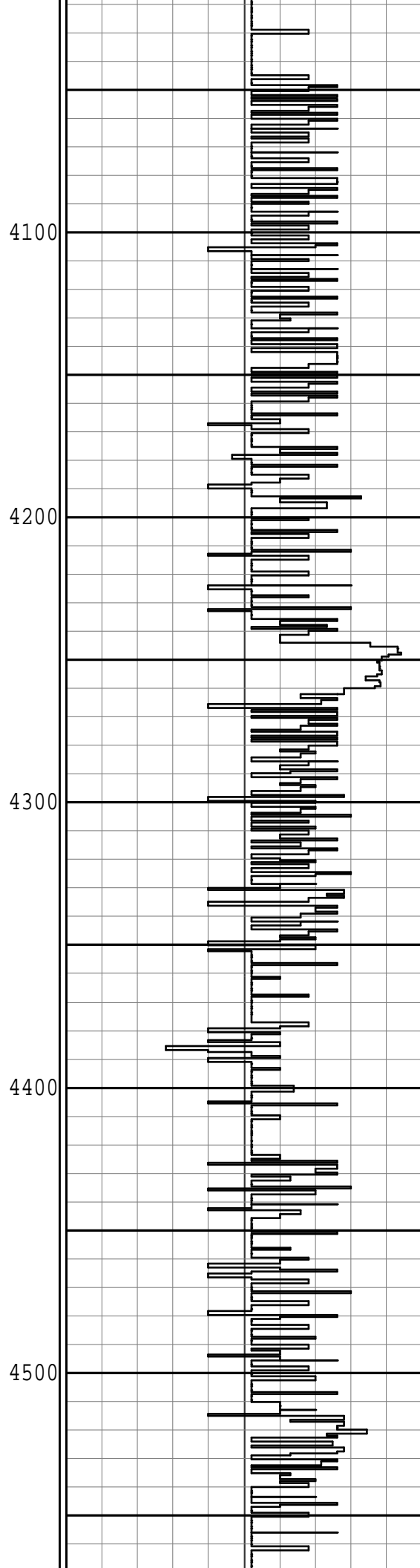
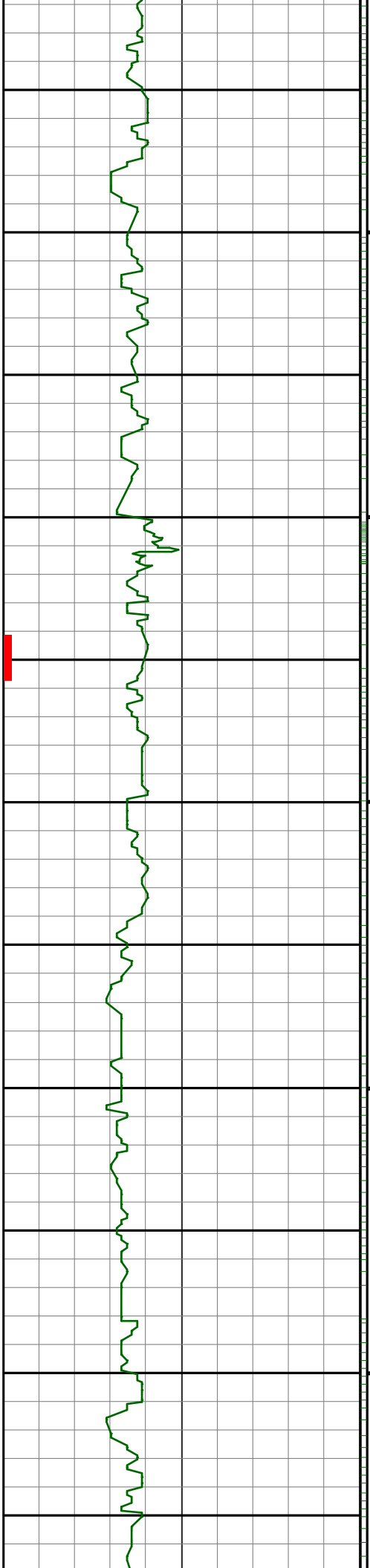


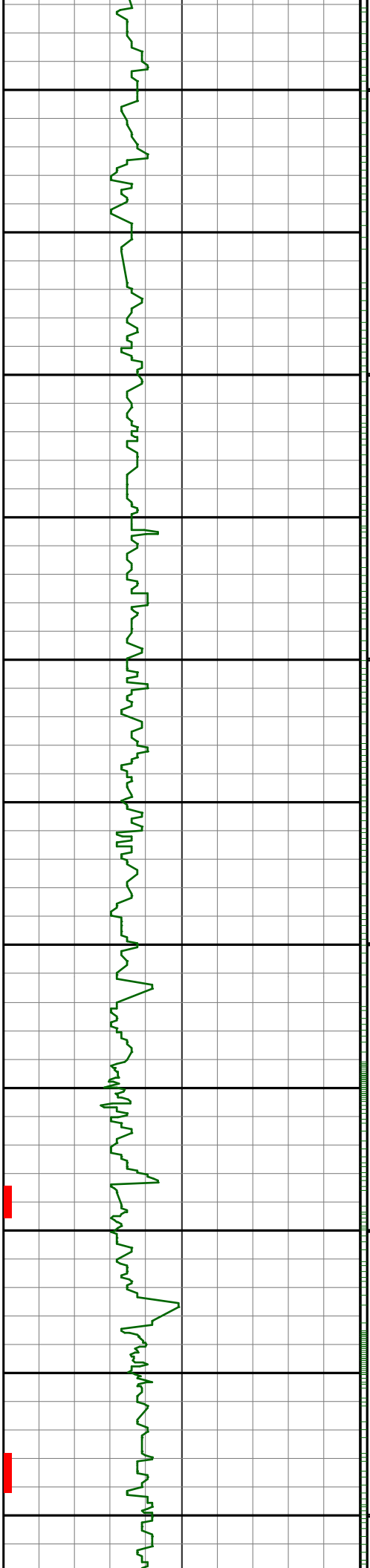




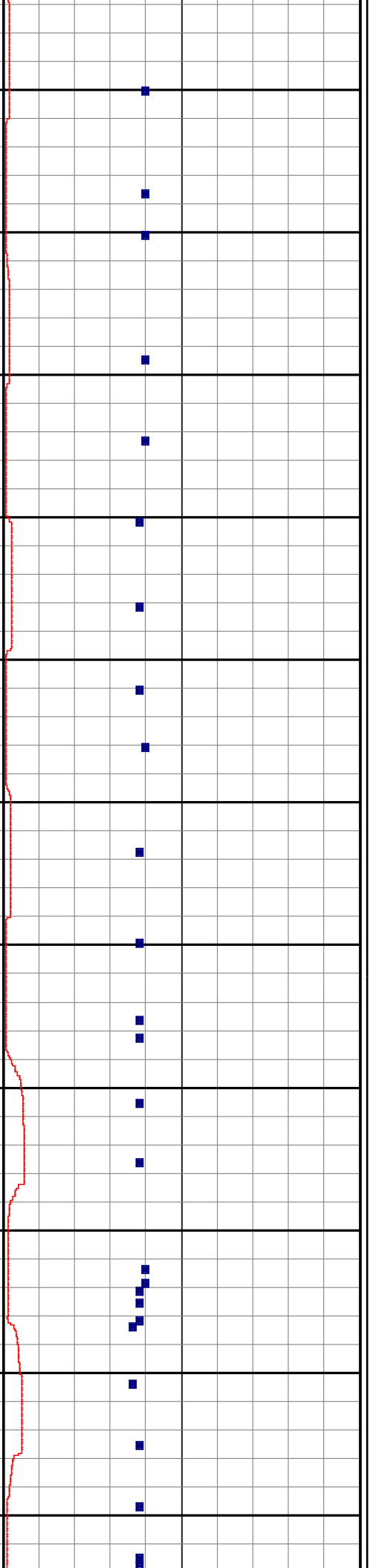
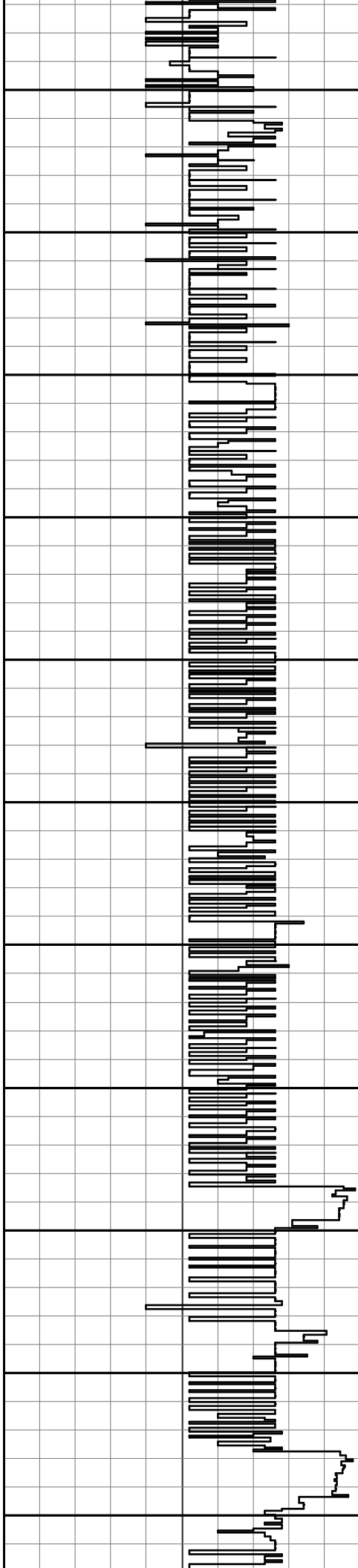


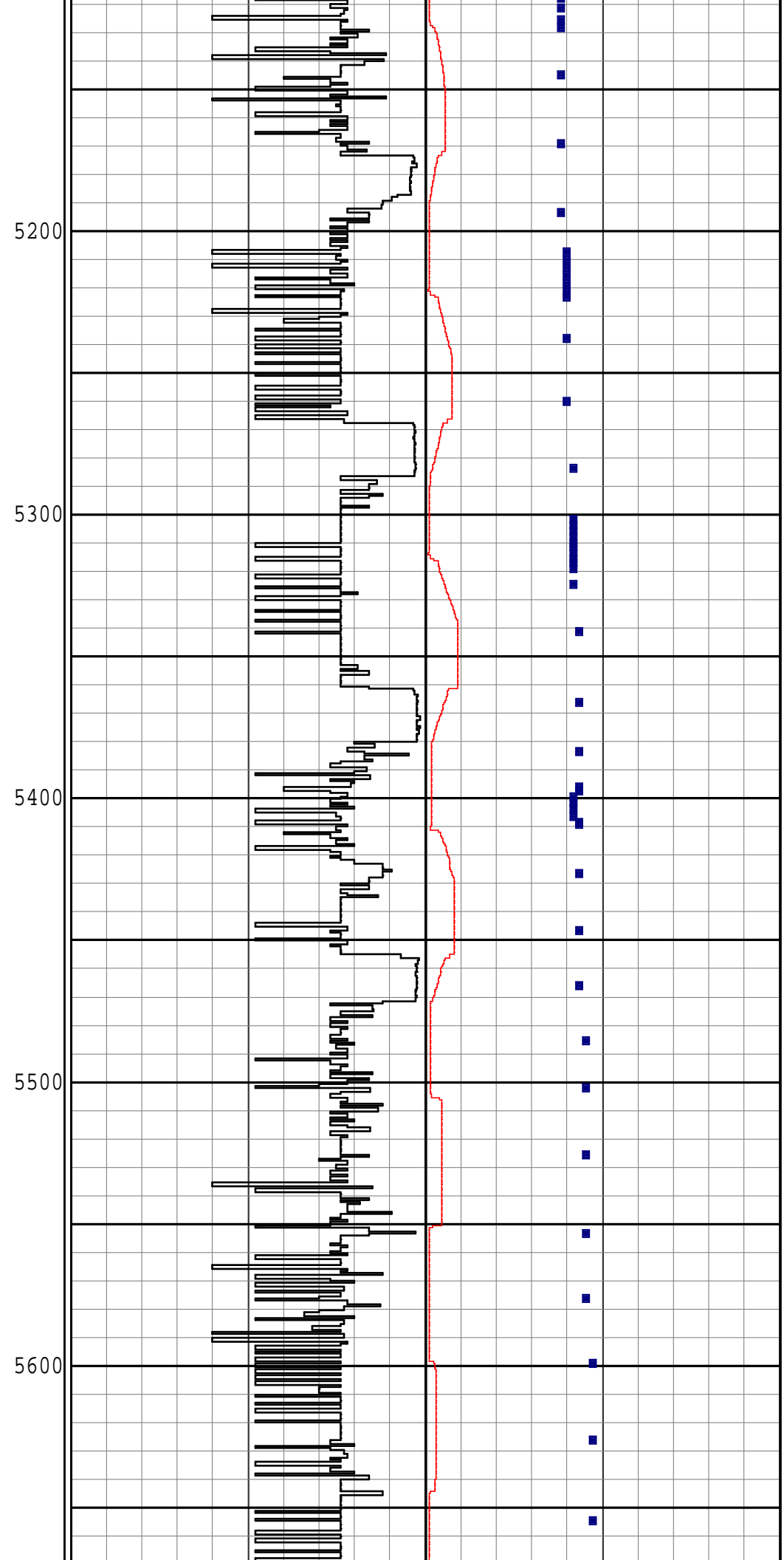
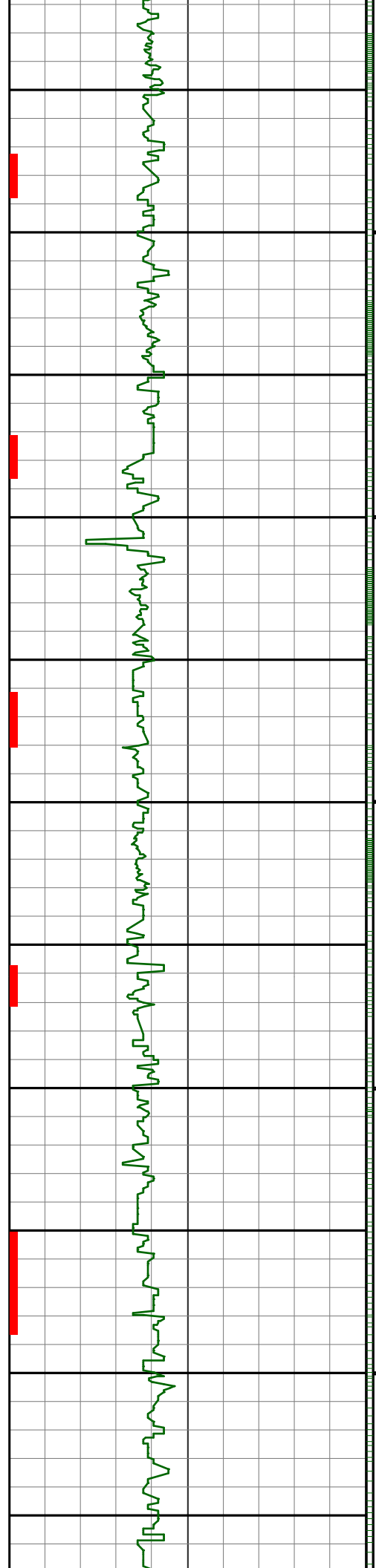


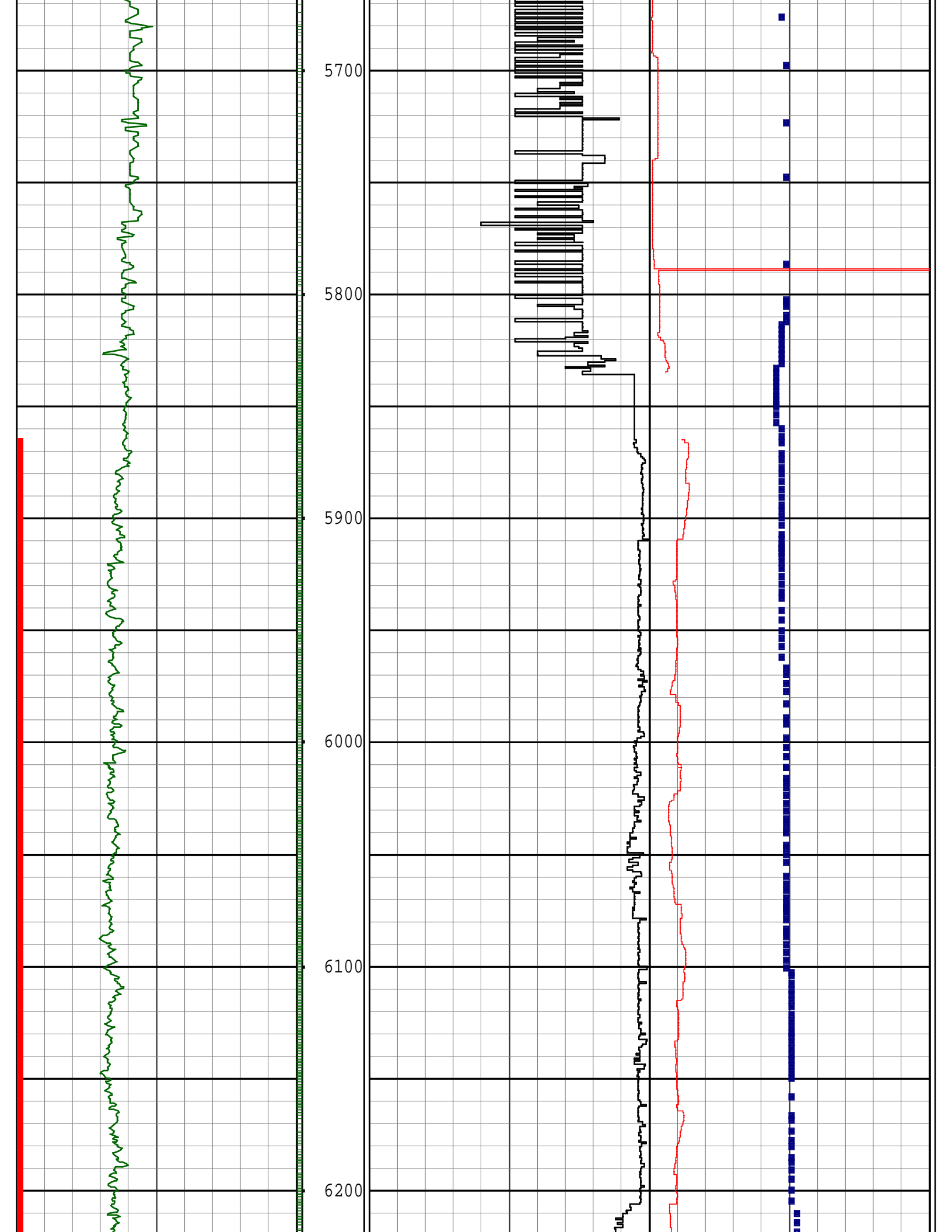


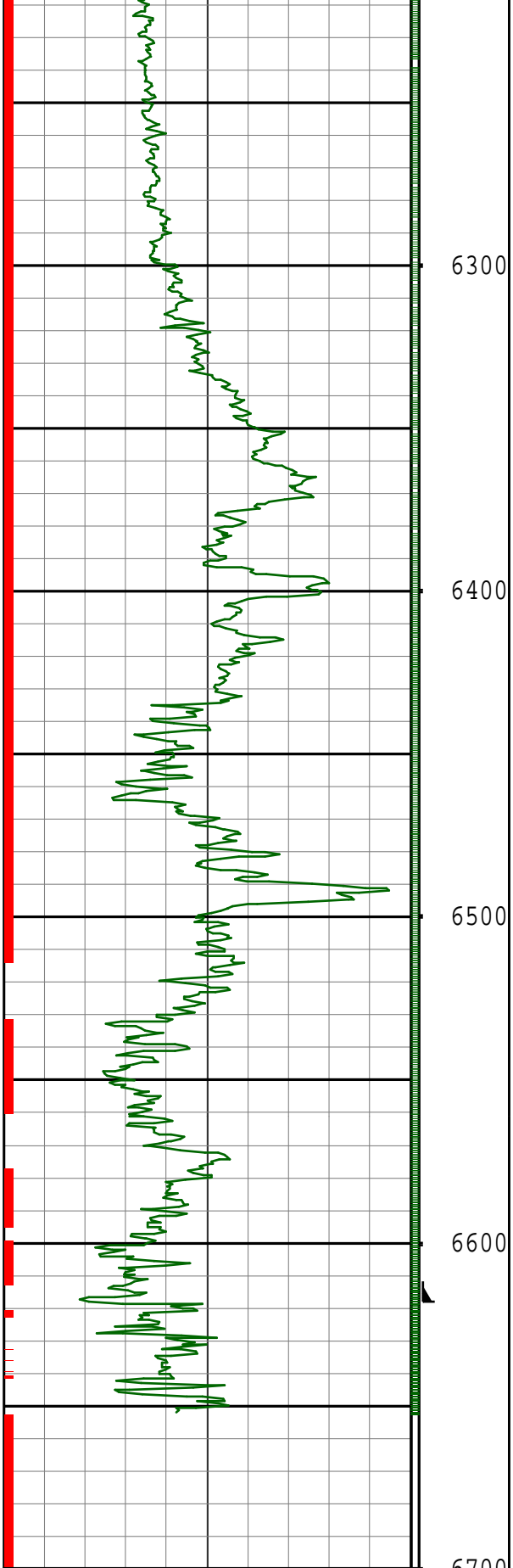


4600
4700
4800
4900
5000
5100

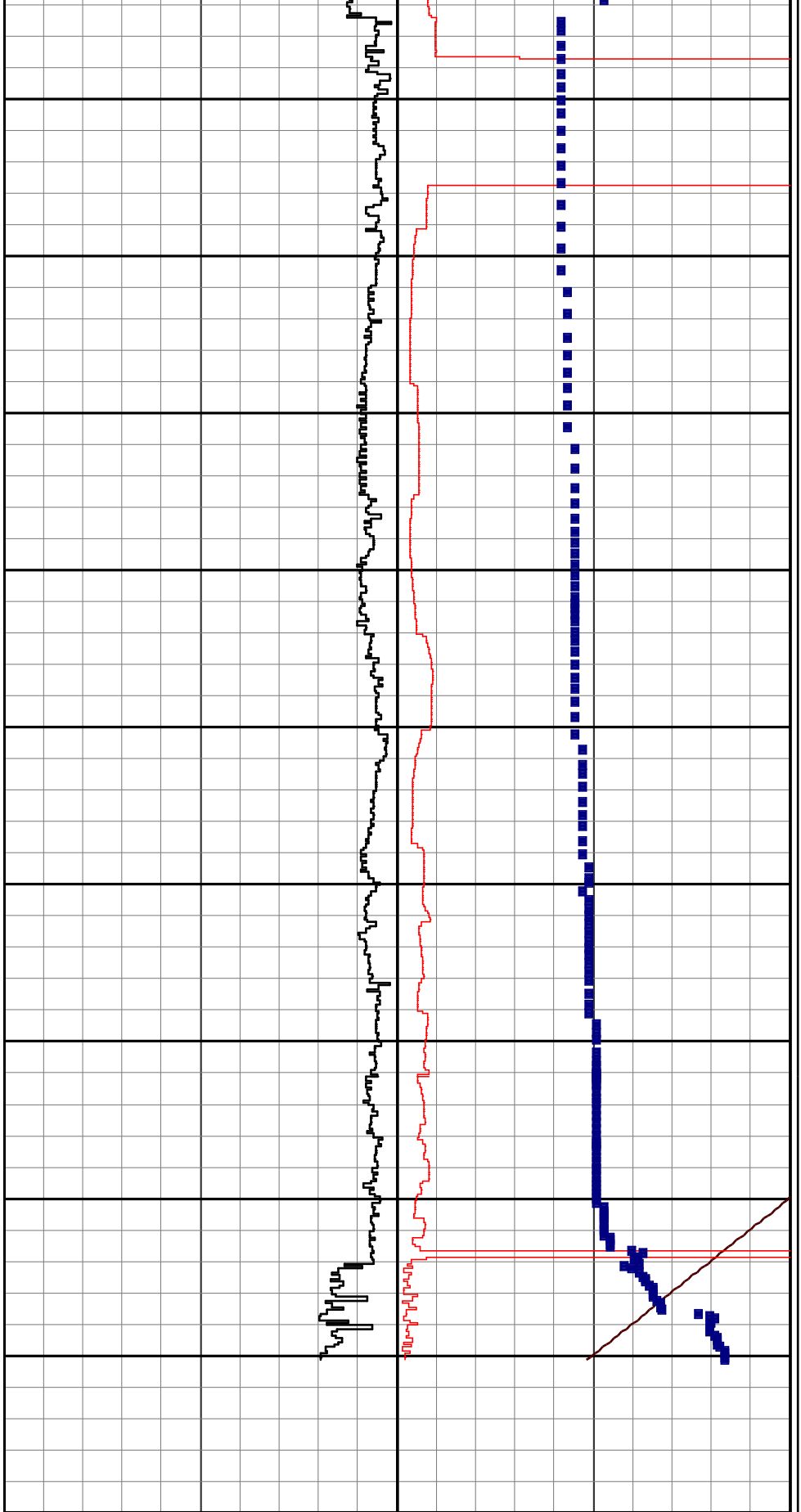








0	GRC API	300
avg = 6 in		
SLIDE (BIT)		
6700	DEPTH	
2" = 100ft	TVD ft	
	SHOES	



1500	ROP ft/hr	0	6700	TVD ft	6600
avg = 1 ft			avg = 1 ft		
			0	GRFET Hr	10
			avg = 1 ft		
			50	TEMP deg F	250
			avg = 1 ft		

												COMMENTS
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Survey Report

Vertical Section Plane: 273.94°	Total Correction: 7.38° East to Grid
Calculation Method: Minimum Curvature	Survey Reference: Wellhead
North Aligned to: Grid North	Well: WELLS RANCH AE 19-644
RT: 30' 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		
386.00	0.40	225.00	386.00	386.00	0.88	0.95 S	0.95 W	1.35	225.00	0.10	
693.00	0.00	285.40	692.99	307.00	1.59	1.71 S	1.71 W	2.42	225.00	0.13	
THE FOLLOWING ARE PATHFINDER MWD SURVEYS											
722.00	0.09	203.05	721.99	29.00	1.60	1.73 S	1.72 W	2.44	224.80	0.31	72.11
813.00	0.35	189.20	812.99	91.00	1.65	2.07 S	1.79 W	2.74	220.86	0.29	75.72
907.00	0.35	184.98	906.99	94.00	1.68	2.64 S	1.86 W	3.23	215.19	0.03	75.72
999.00	0.26	181.75	998.99	92.00	1.67	3.13 S	1.89 W	3.66	211.17	0.10	75.72
1092.00	0.35	149.91	1091.99	93.00	1.51	3.59 S	1.76 W	3.99	206.11	0.20	79.34
1187.00	0.35	177.97	1186.99	95.00	1.31	4.13 S	1.60 W	4.43	201.21	0.18	79.34
1299.00	0.26	179.39	1298.99	112.00	1.26	4.72 S	1.59 W	4.98	198.57	0.08	79.34
1393.00	0.35	174.31	1392.98	94.00	1.19	5.22 S	1.56 W	5.45	196.59	0.10	82.95
1484.00	1.32	71.16	1483.98	91.00	0.18	5.16 S	0.54 W	5.19	185.94	1.58	82.95
1575.00	2.55	22.01	1574.93	91.00	-1.41	2.94 S	1.21 E	3.19	157.59	2.15	86.57
1668.00	3.69	4.23	1667.79	93.00	-2.07	1.96 N	2.21 E	2.95	48.47	1.59	86.57
1761.00	6.07	348.65	1760.45	93.00	-0.79	9.76 N	1.46 E	9.87	8.52	2.91	90.18
1855.00	7.83	354.12	1853.76	94.00	1.61	21.01 N	0.17 W	21.01	359.53	2.00	90.18
1947.00	8.97	351.10	1944.77	92.00	4.28	34.33 N	1.92 W	34.38	356.79	1.33	93.80
2039.00	9.94	337.52	2035.53	92.00	9.40	48.75 N	6.07 W	49.13	352.90	2.64	93.80
2132.00	9.41	335.54	2127.21	93.00	16.59	63.09 N	12.29 W	64.28	348.98	0.67	93.80
2225.00	9.41	336.85	2218.96	93.00	23.67	77.00 N	18.42 W	79.17	346.54	0.23	97.41
2319.00	10.29	337.82	2311.57	94.00	30.87	91.84 N	24.61 W	95.08	345.00	0.95	97.41
2412.00	10.11	335.33	2403.10	93.00	38.43	106.95 N	31.16 W	111.40	343.76	0.51	86.57
2504.00	9.76	334.74	2493.72	92.00	46.10	121.34 N	37.85 W	127.11	342.67	0.40	86.57
2599.00	10.20	344.12	2587.29	95.00	52.88	136.71 N	43.59 W	143.50	342.31	1.77	93.80
2694.00	10.20	343.65	2680.79	95.00	58.65	152.88 N	48.26 W	160.31	342.48	0.09	97.41
2788.00	10.02	342.19	2773.33	94.00	64.57	168.65 N	53.11 W	176.81	342.52	0.33	97.41
2883.00	9.76	342.02	2866.92	95.00	70.64	184.18 N	58.12 W	193.13	342.49	0.28	97.41
2978.00	10.02	341.90	2960.50	95.00	76.74	199.69 N	63.17 W	209.45	342.45	0.27	101.02
3073.00	9.06	349.94	3054.19	95.00	81.66	214.91 N	67.05 W	225.13	342.67	1.73	104.64
3167.00	9.32	349.85	3146.99	94.00	85.30	229.69 N	69.68 W	240.03	343.12	0.28	104.64
3262.00	8.44	350.22	3240.85	95.00	88.83	244.14 N	72.22 W	254.59	343.52	0.93	108.25
3357.00	9.41	347.46	3334.70	95.00	92.68	258.59 N	75.09 W	269.27	343.81	1.12	108.25
3452.00	9.50	347.22	3428.41	95.00	97.14	273.81 N	78.51 W	284.85	344.00	0.10	111.87
3642.00	8.97	346.36	3615.94	190.00	106.13	303.50 N	85.47 W	315.31	344.27	0.29	115.48
3737.00	10.02	349.89	3709.64	95.00	110.37	318.83 N	88.67 W	330.93	344.46	1.26	115.48
3832.00	10.29	350.60	3803.15	95.00	114.33	335.34 N	91.51 W	347.60	344.74	0.31	119.09
3927.00	10.11	350.52	3896.65	95.00	118.23	351.94 N	94.27 W	364.34	345.01	0.19	119.09
4021.00	9.76	351.09	3989.24	94.00	121.91	367.94 N	96.86 W	380.48	345.25	0.39	119.09
4116.00	9.67	351.41	4082.88	95.00	125.43	383.79 N	99.30 W	396.43	345.49	0.11	122.71
4211.00	8.88	350.23	4176.64	95.00	128.90	398.90 N	101.73 W	411.67	345.69	0.86	122.71
4305.00	9.15	344.38	4269.48	94.00	133.13	413.25 N	104.98 W	426.38	345.75	1.02	126.32
4399.00	8.97	345.94	4362.30	94.00	137.89	427.56 N	108.77 W	441.18	345.73	0.32	126.32
4494.00	8.88	346.41	4456.15	95.00	142.39	441.87 N	112.29 W	455.92	345.74	0.12	129.94
4588.00	8.53	346.89	4549.07	94.00	146.62	455.71 N	115.58 W	470.14	345.77	0.38	129.94
4683.00	7.91	346.86	4643.09	95.00	150.60	468.94 N	118.66 W	483.72	345.80	0.65	129.94
4777.00	7.74	346.31	4736.22	94.00	154.42	481.39 N	121.63 W	496.52	345.82	0.20	129.94
4871.00	7.39	345.15	4829.40	94.00	158.29	493.38 N	124.68 W	508.89	345.82	0.41	129.94
4965.00	7.12	344.89	4922.65	94.00	162.13	504.85 N	127.75 W	520.76	345.80	0.29	129.94
5060.00	6.16	341.76	5017.01	95.00	165.98	515.37 N	130.88 W	531.73	345.75	1.08	129.94
5154.00	5.45	340.84	5110.53	94.00	169.64	524.38 N	133.92 W	541.21	345.67	0.76	126.32
5248.00	4.57	341.89	5204.17	94.00	172.79	532.16 N	136.55 W	549.40	345.61	0.94	129.94
5343.00	3.43	346.42	5298.94	95.00	175.07	538.52 N	138.39 W	556.02	345.59	1.25	133.55
5438.00	1.93	359.98	5393.83	95.00	176.04	542.88 N	139.06 W	560.41	345.63	1.70	137.17
5532.00	0.88	37.85	5487.80	94.00	175.74	545.03 N	138.62 W	562.38	345.73	1.43	140.78
5627.00	0.62	63.23	5582.79	95.00	174.89	545.84 N	137.71 W	562.94	345.84	0.44	144.39
5722.00	0.44	68.16	5677.79	95.00	174.12	546.21 N	136.92 W	563.11	345.93	0.20	148.01
5816.00	0.18	80.75	5771.79	94.00	173.65	546.37 N	136.43 W	563.14	345.98	0.28	148.01
5910.00	0.35	296.47	5865.79	94.00	173.78	546.52 N	136.55 W	563.32	345.97	0.54	144.39
6005.00	5.63	287.08	5960.62	95.00	178.58	548.02 N	141.26 W	565.93	345.55	5.56	148.01
6100.00	10.64	284.27	6054.64	95.00	191.76	551.55 N	154.23 W	572.71	344.38	5.29	148.01
6195.00	14.42	284.20	6147.36	95.00	212.03	556.61 N	174.20 W	583.24	342.62	3.98	151.62
6287.00	17.32	285.91	6235.84	92.00	236.71	563.18 N	198.48 W	597.13	340.59	3.19	133.55
6382.00	24.18	278.83	6324.64	95.00	269.97	570.05 N	231.35 W	615.21	337.91	7.68	137.17
6476.00	35.88	275.21	6405.89	94.00	316.86	575.53 N	277.97 W	639.14	334.22	12.59	140.78
6571.00	48.45	267.16	6476.22	95.00	380.29	576.30 N	341.50 W	669.88	329.35	14.38	144.39
6666.00	58.56	265.81	6532.65	95.00	455.91	571.56 N	417.62 W	707.88	323.85	10.70	148.01
6760.00	66.92	266.10	6575.66	94.00	538.59	565.68 N	500.90 W	755.58	318.48	8.90	151.62
6855.00	78.35	265.33	6603.97	95.00	628.17	558.90 N	591.17 W	813.54	313.39	12.06	155.24
6949.00	87.23	264.68	6615.75	94.00	720.20	550.78 N	683.98 W	878.17	308.84	9.47	158.85

Survey Report											
Vertical Section Plane: 273.94°						Total Correction: 7.38° East to Grid					
Calculation Method: Minimum Curvature						Survey Reference: Wellhead					
North Aligned to: Grid North						Well: WELLS RANCH AE 19-644					
RT: 30' 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)
7025.00	87.93	264.68	6618.96	76.00	795.15	543.74 N	759.58 W	934.14	305.60	0.92	173.31
7118.00	89.43	263.55	6621.11	93.00	886.75	534.21 N	852.06 W	1005.68	302.09	2.02	173.31
7210.00	90.92	264.78	6620.83	92.00	977.41	524.86 N	943.58 W	1079.73	299.08	2.10	158.85
7304.00	89.52	266.25	6620.46	94.00	1070.39	517.51 N	1037.29 W	1159.21	296.51	2.16	155.24
7397.00	89.96	267.41	6620.89	93.00	1162.68	512.37 N	1130.14 W	1240.86	294.39	1.33	
7490.00	89.16	269.01	6621.60	93.00	1255.20	509.46 N	1223.09 W	1324.95	292.61	1.92	158.85
7582.00	90.13	268.77	6622.17	92.00	1346.84	507.68 N	1315.07 W	1409.66	291.11	1.09	166.08
7677.00	90.13	270.77	6621.96	95.00	1441.59	507.30 N	1410.06 W	1498.54	289.79	2.11	169.69
7772.00	87.85	269.44	6623.63	95.00	1536.35	507.47 N	1505.04 W	1588.29	288.63	2.78	173.31
7867.00	88.02	268.97	6627.05	95.00	1630.97	506.15 N	1599.97 W	1678.12	287.55	0.53	176.92
7961.00	87.76	267.88	6630.51	94.00	1724.47	503.57 N	1693.87 W	1767.14	286.56	1.19	180.54
8056.00	88.29	267.73	6633.79	95.00	1818.87	499.94 N	1788.74 W	1857.29	285.62	0.58	184.15
8151.00	89.34	267.24	6635.75	95.00	1913.24	495.77 N	1883.63 W	1947.78	284.75	1.22	184.15
8245.00	90.22	269.79	6636.11	94.00	2006.81	493.33 N	1977.59 W	2038.19	284.01	2.87	187.76
8340.00	91.28	269.12	6634.87	95.00	2101.51	492.43 N	2072.57 W	2130.27	283.37	1.32	191.38
8434.00	88.29	267.97	6635.22	94.00	2195.08	490.04 N	2166.53 W	2221.26	282.75	3.41	191.38
8529.00	89.96	268.56	6636.67	95.00	2289.60	487.17 N	2261.47 W	2313.35	282.16	1.87	194.99
8623.00	90.92	268.31	6635.95	94.00	2383.16	484.60 N	2355.43 W	2404.77	281.63	1.05	198.61
8718.00	91.71	268.67	6633.77	95.00	2477.71	482.10 N	2450.37 W	2497.35	281.13	0.91	198.61
8813.00	90.13	268.96	6632.25	95.00	2572.31	480.13 N	2545.34 W	2590.23	280.68	1.69	194.99
8907.00	88.46	268.19	6633.40	94.00	2665.89	477.80 N	2639.30 W	2682.20	280.26	1.96	198.61
9001.00	90.92	269.53	6633.91	94.00	2759.51	475.93 N	2733.27 W	2774.39	279.88	2.98	198.61
9095.00	90.75	269.71	6632.54	94.00	2853.23	475.30 N	2827.26 W	2866.93	279.54	0.26	202.22
9190.00	88.29	269.51	6633.34	95.00	2947.95	474.66 N	2922.24 W	2960.54	279.23	2.60	202.22
9284.00	90.48	269.90	6634.35	94.00	3041.68	474.17 N	3016.23 W	3053.27	278.93	2.37	202.22
9379.00	88.37	268.93	6635.30	95.00	3136.38	473.20 N	3111.21 W	3146.99	278.65	2.44	205.83
9473.00	89.96	269.65	6636.67	94.00	3230.05	472.04 N	3205.19 W	3239.77	278.38	1.86	205.83
9567.00	89.69	268.83	6636.96	94.00	3323.73	470.79 N	3299.18 W	3332.61	278.12	0.92	209.45
9662.00	89.52	270.61	6637.61	95.00	3418.47	470.33 N	3394.18 W	3426.61	277.89	1.88	209.45
9756.00	89.43	271.90	6638.47	94.00	3512.36	472.39 N	3488.15 W	3519.99	277.71	1.38	213.06
9850.00	89.69	272.55	6639.19	94.00	3606.32	476.03 N	3582.07 W	3613.57	277.57	0.74	213.06
9944.00	89.25	271.52	6640.06	94.00	3700.26	479.37 N	3676.01 W	3707.13	277.43	1.19	209.45
10038.00	88.11	267.99	6642.23	94.00	3793.97	478.97 N	3769.97 W	3800.27	277.24	3.95	209.45
10132.00	88.99	268.35	6644.61	94.00	3887.46	475.97 N	3863.89 W	3893.09	277.02	1.01	213.06
10227.00	88.55	266.85	6646.65	95.00	3981.86	471.99 N	3958.78 W	3986.82	276.80	1.65	213.06
10321.00	88.72	266.16	6648.89	94.00	4075.04	466.26 N	4052.58 W	4079.31	276.56	0.76	216.68
10416.00	88.11	264.03	6651.52	95.00	4168.87	458.15 N	4147.19 W	4172.42	276.30	2.33	216.68
10510.00	90.57	264.13	6652.60	94.00	4261.46	448.45 N	4240.67 W	4264.32	276.04	2.62	216.68
10604.00	91.71	263.79	6650.73	94.00	4354.02	438.56 N	4334.13 W	4356.26	275.78	1.27	220.29
10698.00	92.15	264.41	6647.56	94.00	4446.59	428.91 N	4427.58 W	4448.31	275.53	0.81	220.29
10793.00	91.19	265.62	6644.79	95.00	4540.39	420.65 N	4522.18 W	4541.70	275.31	1.63	220.29
10887.00	90.92	267.75	6643.06	94.00	4633.62	415.22 N	4616.00 W	4634.64	275.14	2.28	220.29
10982.00	90.31	267.69	6642.04	95.00	4728.05	411.44 N	4710.92 W	4728.85	274.99	0.64	216.68
11076.00	92.15	268.91	6640.02	94.00	4821.57	408.65 N	4804.85 W	4822.20	274.86	2.35	220.29
11171.00	89.78	269.40	6638.43	95.00	4916.22	407.25 N	4899.82 W	4916.71	274.75	2.55	220.29
11265.00	88.81	268.54	6639.58	94.00	5009.86	405.56 N	4993.79 W	5010.23	274.64	1.38	220.29
11360.00	87.76	267.59	6642.42	95.00	5104.31	402.36 N	5088.69 W	5104.58	274.52	1.49	223.91
11455.00	86.17	266.63	6647.45	95.00	5198.50	397.58 N	5183.44 W	5198.66	274.39	1.95	223.91
11549.00	88.37	267.14	6651.93	94.00	5291.68	392.47 N	5277.18 W	5291.76	274.25	2.40	220.29
11644.00	91.80	267.50	6651.79	95.00	5386.03	388.03 N	5372.07 W	5386.06	274.13	3.63	223.91
11739.00	92.77	267.15	6648.00	95.00	5480.32	383.60 N	5466.89 W	5480.33	274.01	1.09	227.52
11834.00	90.75	266.95	6645.09	95.00	5574.59	378.72 N	5561.71 W	5574.59	273.90	2.14	227.52
11924.00	92.42	267.20	6642.60	90.00	5663.90	374.12 N	5651.55 W	5663.92	273.79	1.88	227.52
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 11985'MD											
11985.00	92.42	267.20	6640.02	61.00	5724.43	371.15 N	5712.43 W	5724.47	273.72	0.00	

BOTTOM HOLE ASSEMBLY RECORD							
RUN #1		ft	RUN #2		ft	RUN #3	
8 3/4" PDC BIT	0.69		8 3/4" PDC BIT	0.65		6 1/8" PDC BIT	0.56
1.75° FX MOTOR	26.28		2.25 R675 MOTOR	24.56		1.5° G2 MOTOR	26.80
NM STABILIZER	5.53		NM FLOAT SUB	2.93		SUB MULESHOE	3.05
SUB MULESHOE	2.66		SUB MULESHOE	2.66		HDS-1R (DIR/GR)	30.03
HDS-1R (DIR/GR)	30.62		HDS-1R (DIR/GR)	30.62		NM DC	30.73
NM FLEX DC	31.05		NM FLEX DC	31.05		NM FLOAT SUB	1.78
NM FLEX DC	31.07		NM FLEX DC	31.07		NM DC	30.85
FILTER SUB	3.23		FILTER SUB	3.23		FILTER SUB	3.10

DRILL PIPE	1040.06	XOVER SUB	3.20	XOVER SUB	3.78		
XOVER SUB	3.20	DRILL PIPE	1040.06	HWDP	31.55		
HWDP	1392.51			REAMER	8.52		
				DRILL PIPE	2179.05		
				AGITATOR	11.55		
				SHOCK SUB	11.14		
				DRILL PIPE	3875.91		
				HWDP	1392.91		
=====		=====		=====			
TOTAL BHA LENGTH	2566.90	TOTAL BHA LENGTH	1170.03	TOTAL BHA LENGTH	7643.97		
SENSOR OFFSETS:		SENSOR OFFSETS:		SENSOR OFFSETS:			
=====		=====		=====			
DIRECTIONAL	60.84	DIRECTIONAL	58.08	DIRECTIONAL	58.69		
GAMMA-RAY	43.44	GAMMA-RAY	40.68	GAMMA RAY	41.29		

GAMMA-RAY



A Schlumberger Company

2" = 100'
FEET TVD