

Company : BAYSWATER EXPLORATION & PRODUCTION

Well : MATRIX L-29HC

Field : GREELEY

Date : 05-Mar-2015

Time : 09:40



A Schlumberger Company

NEUTRON DENSITY

1" = 100'
FEET MD

COMPANY : BAYSWATER EXPLORATION & PRODUCTION
WELL : MATRIX L-29HC
FIELD : GREELEY
COUNTY : WELD
STATE : CO
COUNTRY : USA
API No. : 05-123-40704

COMPANY : BAYSWATER EXPLORATION & PRODUCTION
WELL : MATRIX L-29HC
FIELD : GREELEY
COUNTY : WELD
STATE : CO
COUNTRY : USA
API WELL No. : 05-123-40704

WELL LOCATION
LAT: 40°27'10"N LON: 104°41'20"W
X: 3,225,756 Y: 1,408,856 NAD83
SEC: 29 TWP: 6N RANGE: 65W

OTHER SERVICES
DIRECTIONAL
ROP
CALIPER

DEPTH REF. : ROTARY TABLE
ELEVATION : 22.50 ft (ROTARY TABLE - GROUND LEVEL)
ALTITUDE : 4708.00 ft (GROUND LEVEL - MEAN SEA LEVEL)

BOREHOLE RECORD				DEVIATION RECORD			
HOLE SIZE in	FROM ft	TO ft	INCLINATION deg	FROM ft	TO ft	TO ft	TO ft
8 3/4	0	7558	00-13	0	2495		
6 1/8	7558	11492	12+/-04	2495	6588		
			12-30	6588	6873		
			30-60	6921	7254		
			60-90	7254	8005		
			90+/-02	8005	11492		
CASING RECORD							
CASING SIZE in	FROM ft	TO ft					
9 5/8	0	748					
7	0	7546					

DRILLING Co.: FRONTIER
RIG : 8
LMD UNIT No.: RENTAL DISTRICT: COMMERCE CITY
SPUD DATE : 05-JAN-15
LMD START DATE : 02-MAR-15 DEPTH : 7558 ft
LMD END DATE : 05-MAR-15 DEPTH : 11492 ft
TOTAL DEPTH : 11492 ft

RUN DATA					
RUN NUMBER	1				
START DATE	02-MAR-15				
START TIME	18:30				
END DATE	05-MAR-15				
END TIME	07:00				
DEPTH IN ft	7558				
DEPTH OUT ft	11492				
LOG TOP ft	7546				
LOG BOTTOM ft	11419				
HOLE SIZE in	6 1/8				
MUD DATA @ ft	10540				
MUD TYPE	WATER BASED				
DENSITY lb/gal	9.60				
VISCOSITY s/qt	43				
pH					
FLUID LOSS cm3/30					
SALINITY ppm	2805				
Rm ohmm @ deg F	@				
Rmf ohmm @ deg F	@				

MAX REC TEMP deg F	215					
Rm @ MAX TEMP ohmm						
LWD ENGINEER #1	M.OBERHOFER					
LWD ENGINEER #2	T.RICKER					
LWD ENGINEER #3						

REMARKS

BAYSWATER EXPLORATION & PRODUCTION LLC AFE:40704
 PATHFINDER JOB #: 15CC00285

ALL LOGGING DATA IS MEMORY UNLESS STATED OTHERWISE.
 ALL REFERENCES TO LOG TOP, LOG BOTTOM, OR LOGGING TOOL DEPTH REFER TO THE GAMMA-RAY SENSOR UNLESS STATED OTHERWISE. SENSOR OFFSETS FOR THE OTHER TOOLS ARE SHOWN IN THE BHA REPORT ON THE LOG TRAILER.
 ALL ANNOTATIONS IN THE DEPTH TRACK ARE REFERENCED TO BIT DEPTH.

THIRD PARTY DEPTH TRACKING SERVICES PROVIDED BY PASON.

RUN #1: 4 3/4" HDS-1L/GAMMA/ISDNCS LOGGING RUN.

DENSITY POROSITY (DPHI) IS CALCULATED FOR A MATRIX DENSITY OF 2.68 G/CC AND A FLUID DENSITY OF 1.00 G/CC.

DENSITY DATA DENSITY (DDDN) TO THE LEFT OF THE DENSITY TRACK REPRESENTS 0-4 SAMPLES PER FOOT.
 THE SLIDE INDICATOR TO THE LEFT OF THE DENSITY TRACK IS OFFSET TO THE DENSITY MEASUREMENT POINT.

DENSITY MEASUREMENTS MAY BE SUBSTANDARD THROUGH INTERVALS OF HIGH WEIGHTED STANDOFF (WSOD).
 HIGH WSOD IS CAUSED BY POOR WALL CONTACT AND MAY BE THE RESULT OF UNFAVORABLE STABILIZER POSITION,
 UNFAVORABLE TOOLFACE ORIENTATION DURING SLIDING, EXCESSIVE HOLE ENLARGEMENTM, OR HIGH ROP.

REMARK #1: GAMMA-RAY FROM 732'-7506'MD (732'-7097'TVD) IS PROVIDED BY ENSIGN DIRECTIONAL. ROP OVER
 CORRESPONDING INTERVAL ALSO PROVIDED BY ENSIGN DIRECTIONAL.

REMARK #2: GAMMA-RAY LOGGED THROUGH CASING FROM 7506'-7546'MD (7097'-7098'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 : 05-Mar-2015 09:39

0	GRC API	300	DEPTH	20	DPHI pu	0	7150	TVD ft	7050
	avg = 6 in		MD ft						
			5" = 100ft	-0.8	DRHO g/cc	0.2	0	GRFET Hr	10
1000	ROP ft/hr	0	SHOES	0	PE	10		avg = 1 ft	
	avg = 2 ft							COMMENTS	
5	CALI in	15						inc azi	
5	BS in	15						# TVD	
0	WSOD in	10							
	SLIDE (BIT)								

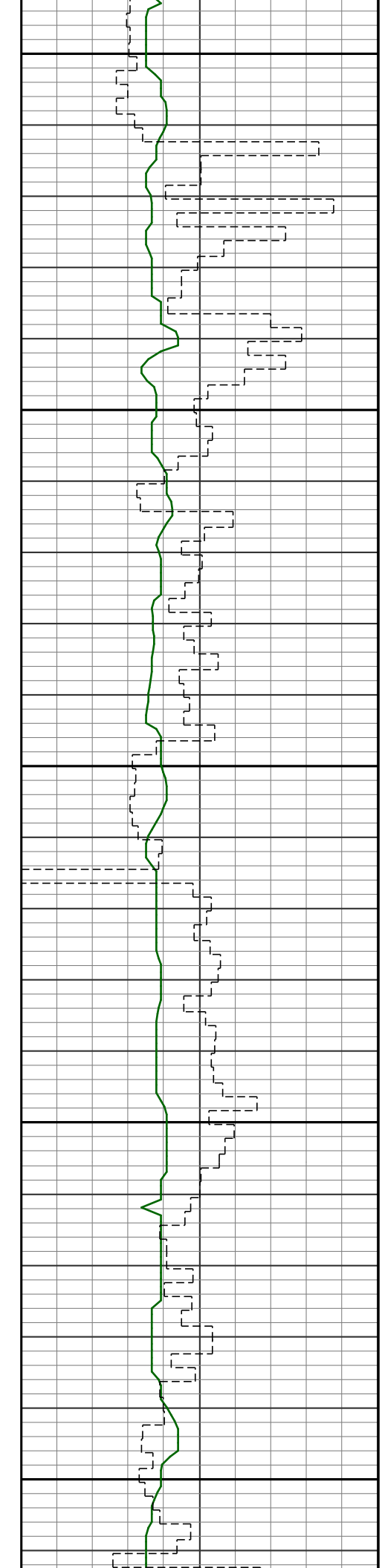
SEE REMARK #1

800

0.6 22.9
9 828

900

0.6 29.4
10 923

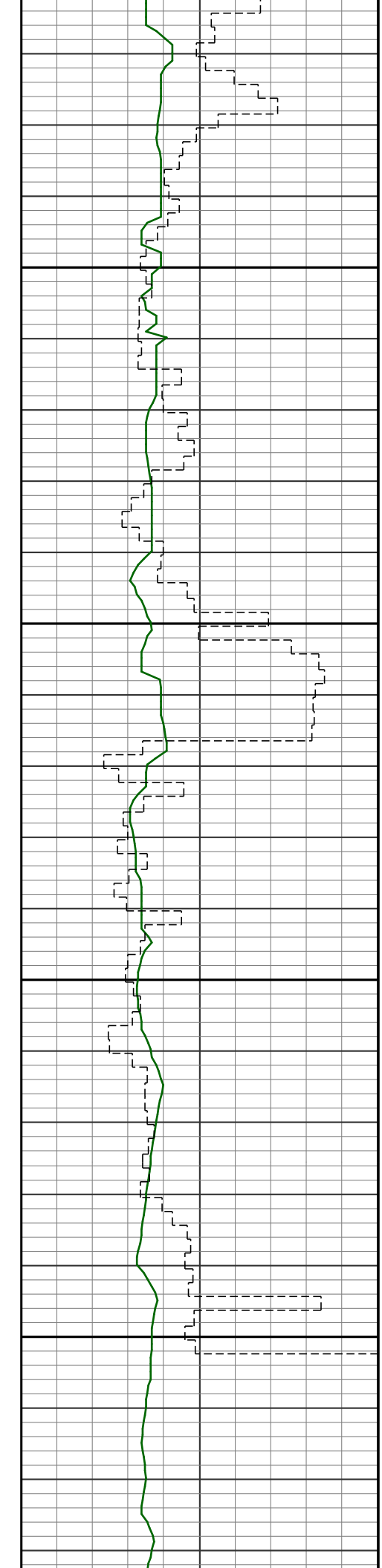


1000

s 0.6 20.3
11 1018

1100

s 0.7 14.5
12 1113

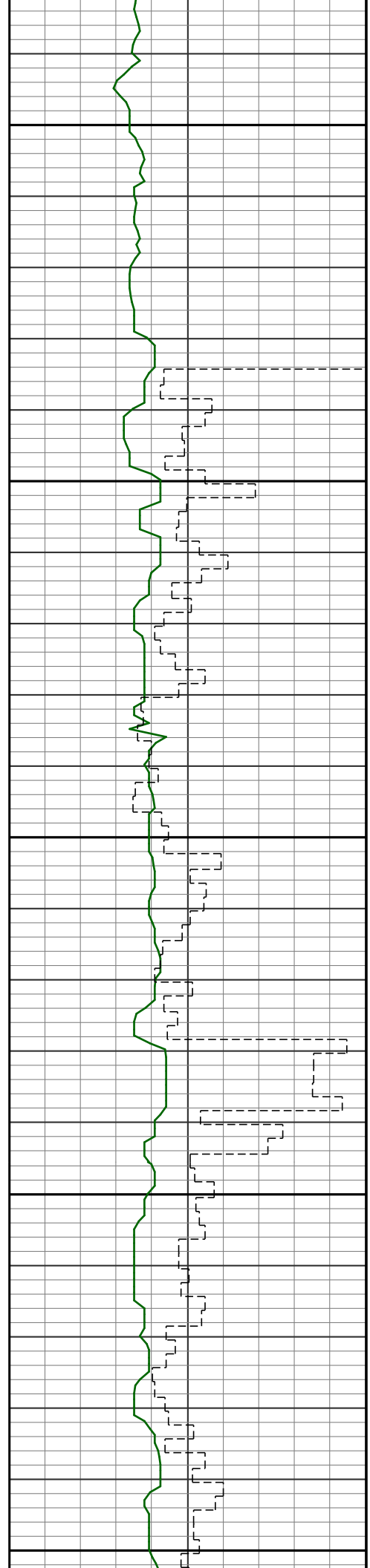


1200

S 0.6 18.0
13 1205

1300

S 1.3 234.2
14 1297



1400

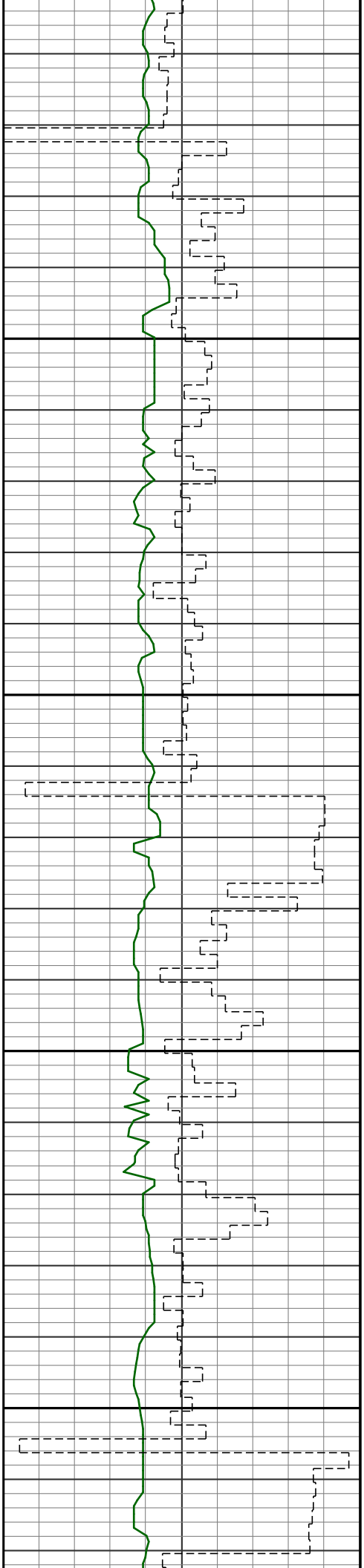
1500

1600

1.4 231.8
15 1390

1.2 230.5
16 1481

0.2 303.7
17 1574

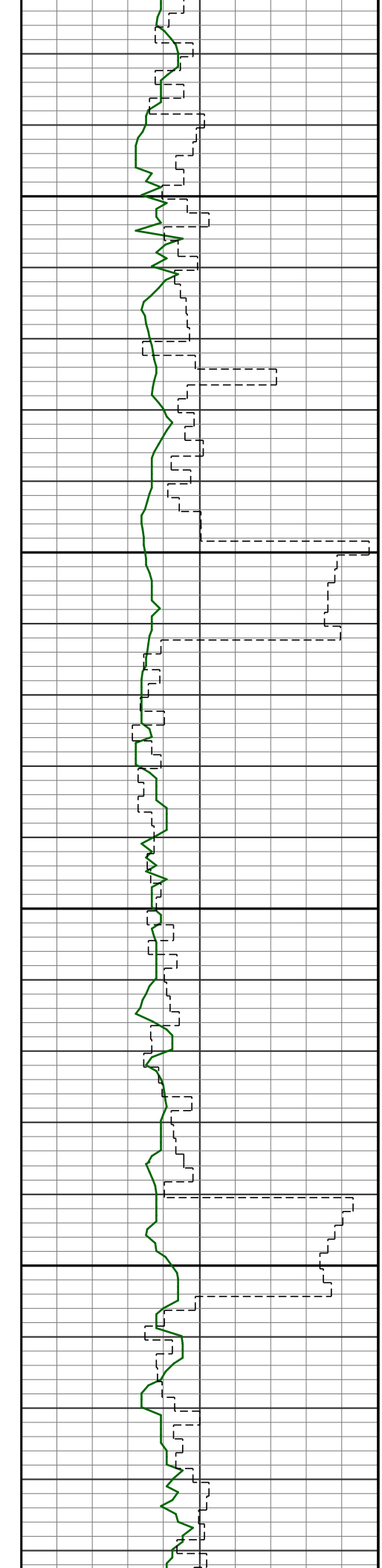


1700

s 0.4 296.6
18 1666

s 1.4 134.2
19 1758

1800



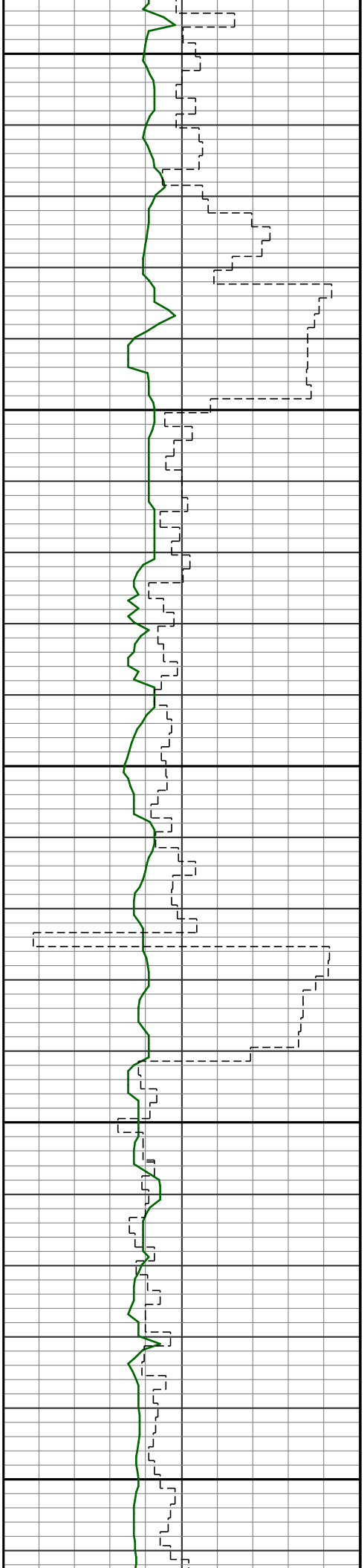
1900

2000

3.3 128.0
20 1850

4.6 111.0
21 1942

6.1 106.8
22 2033

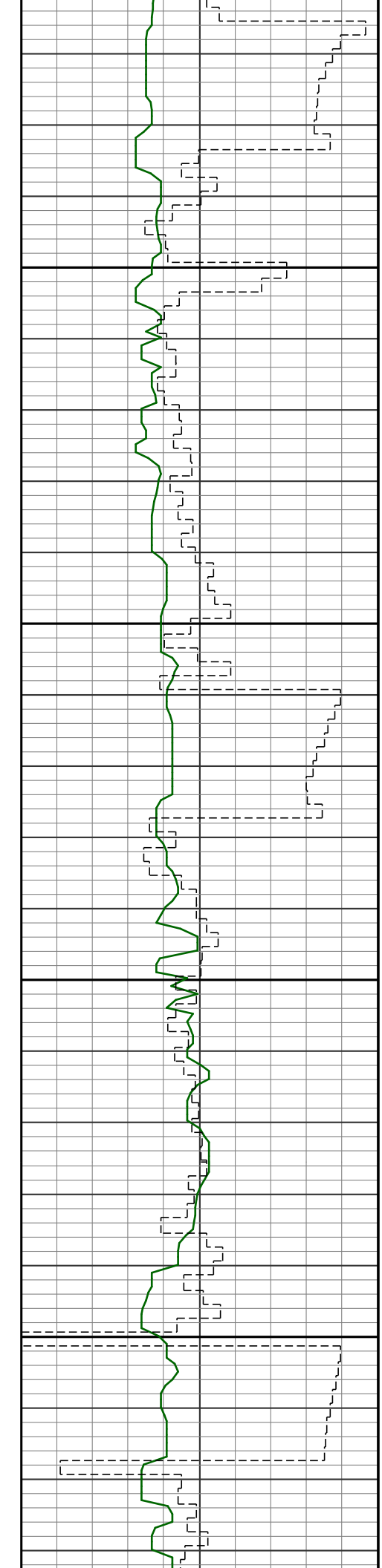


2100

s 6.9 123.7
23 2125

2200

s 8.3 119.1
24 2216

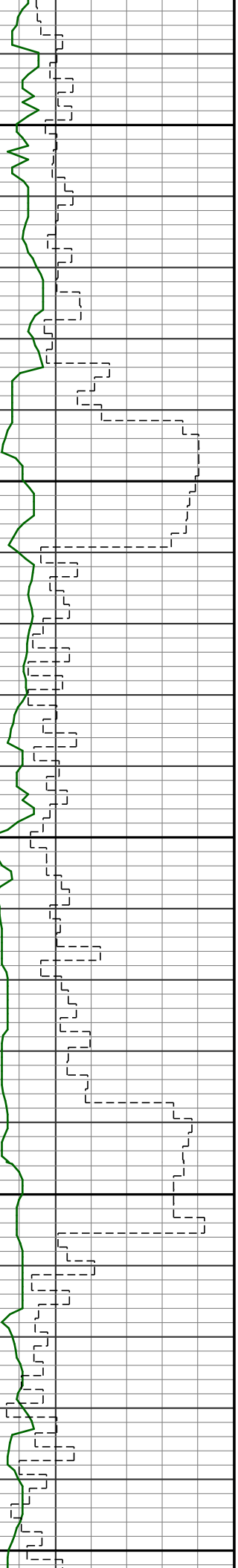


2300

9.3 117.5
25 2307

2400

10.5 120.0
26 2398



2500

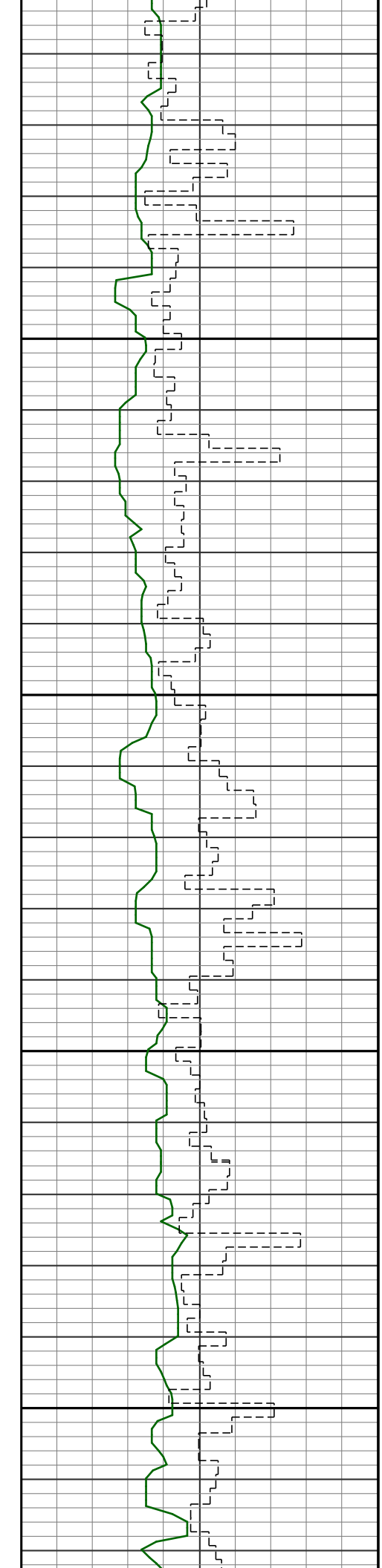
2600

2700

S 12.4 117.9
27 2488

S 12.1 120.8
28 2581

S 13.2 126.5
29 2674



2800

14.3 127.0
s 30 2767

2900

14.0 125.8
s 31 2859

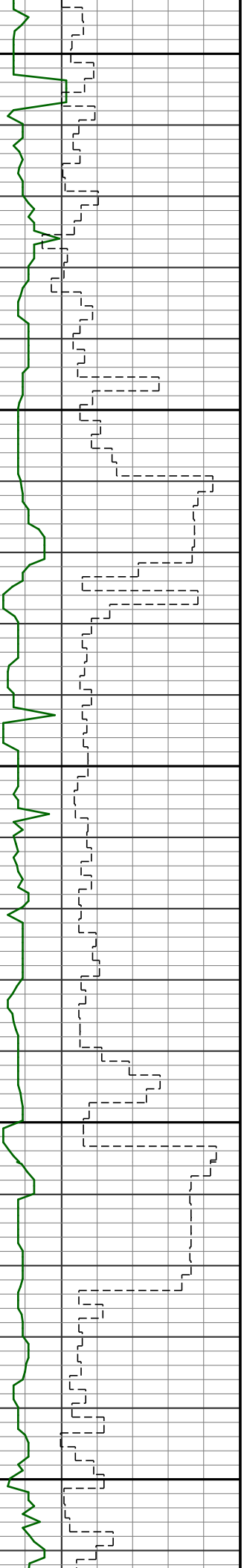


3000

3100

s 12.2 121.7
32 2952

s 13.4 124.5
33 3045



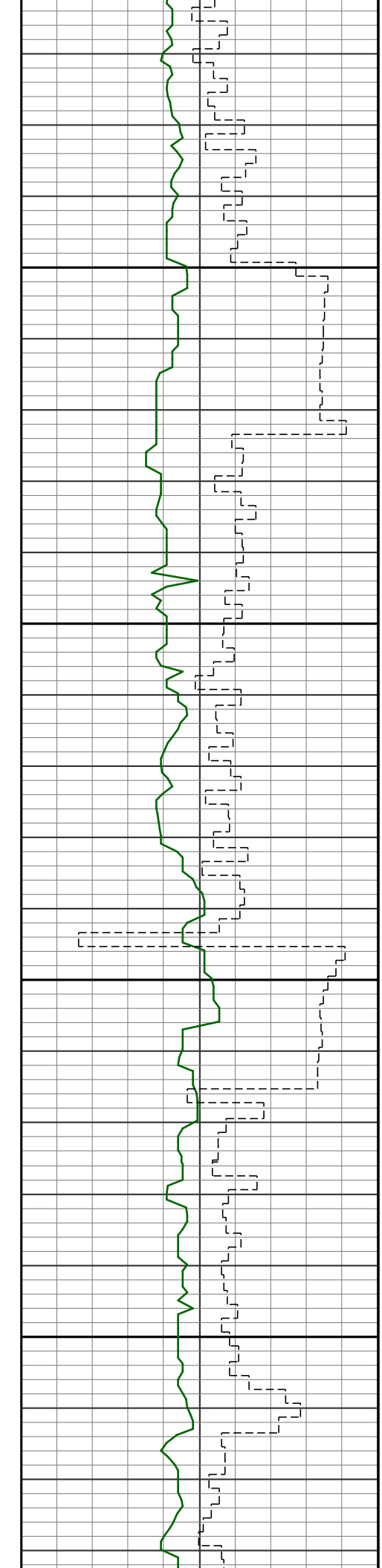
3200

3300

10.9 119.3
34 3137

10.3 121.5
35 3232

9.9 126.1
36 3325

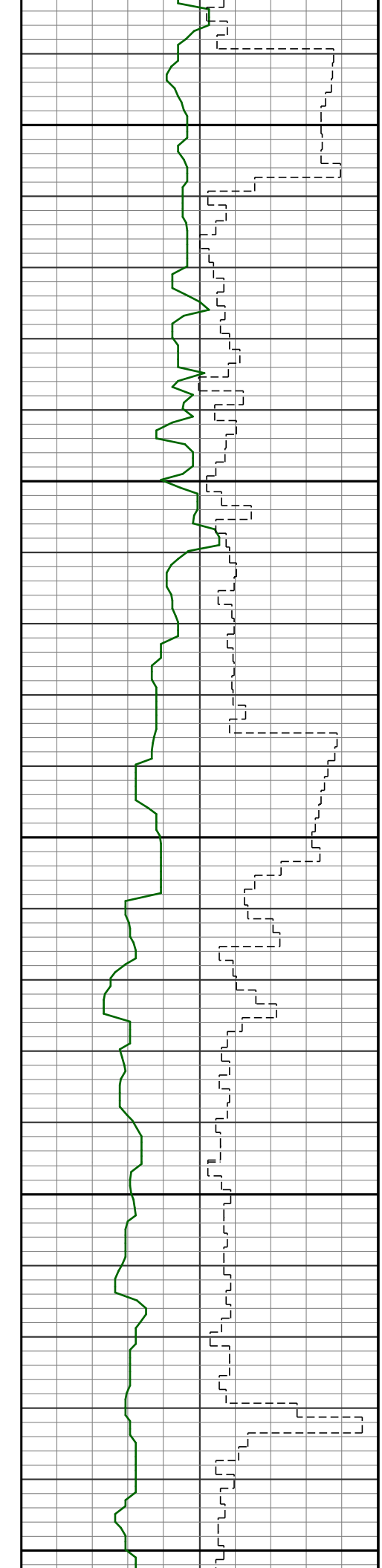


3400

10.6 124.9
s 37 3419

3500

11.7 128.0
s 38 3512



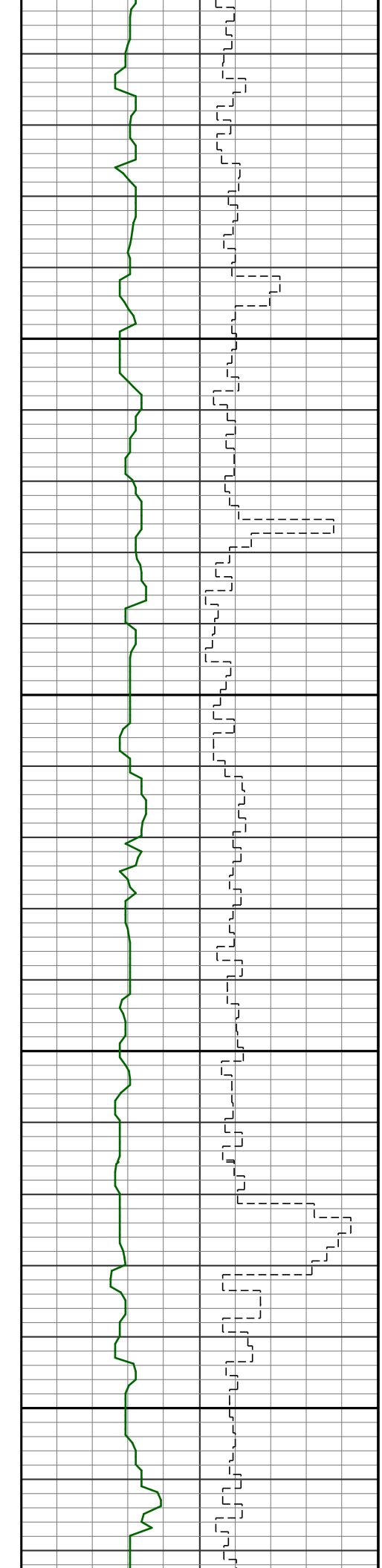
3600

12.4 122.4
S 39 3605

3700

13.8 124.9
S 40 3698

3800



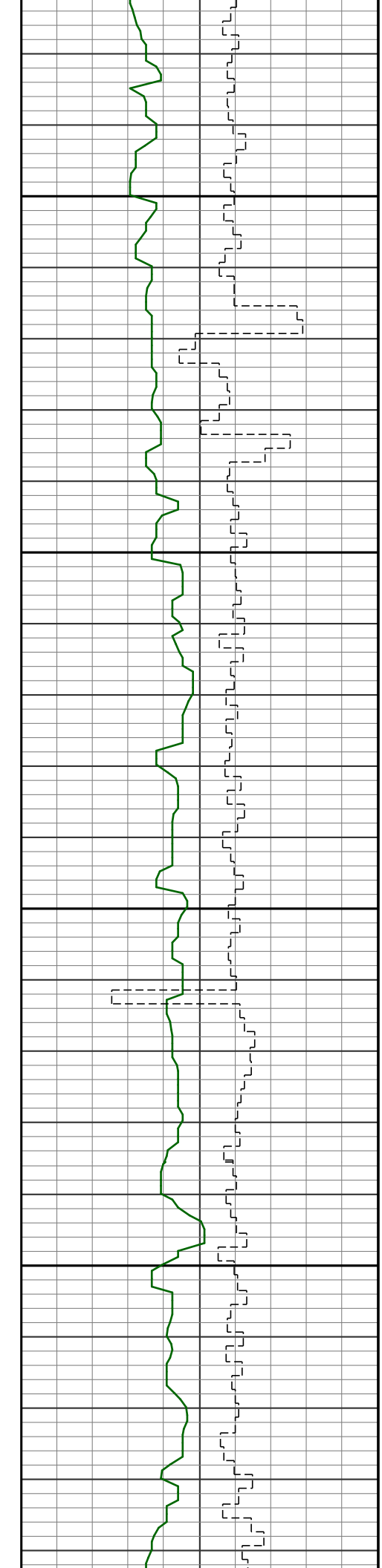
3900

4000

s 15.0 125.6
41 3790

s 16.4 126.5
42 3882

s 16.3 123.8
43 3973

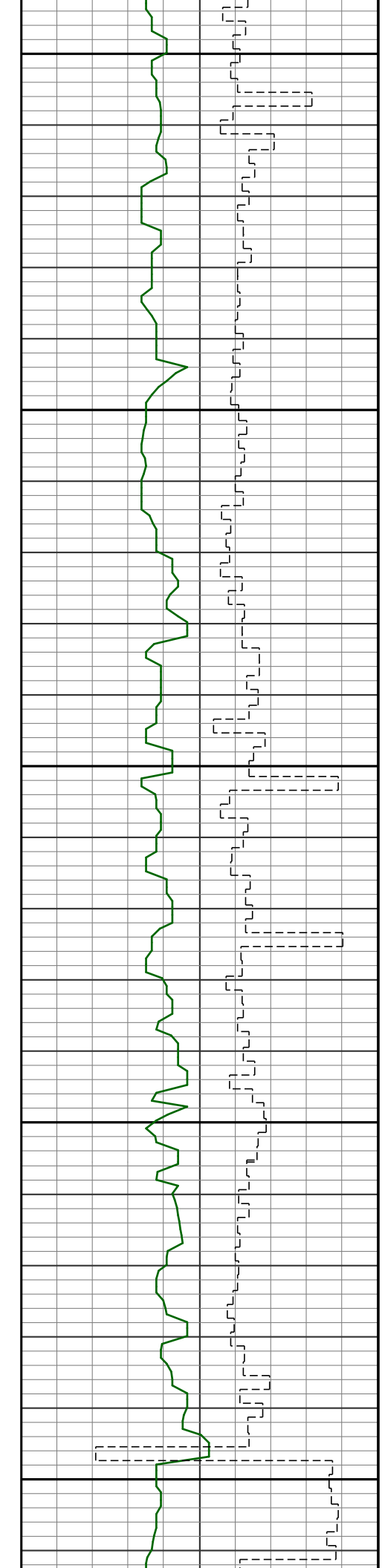


4100

S 15.1 121.4
44 4064

4200

S 13.1 117.9
45 4158

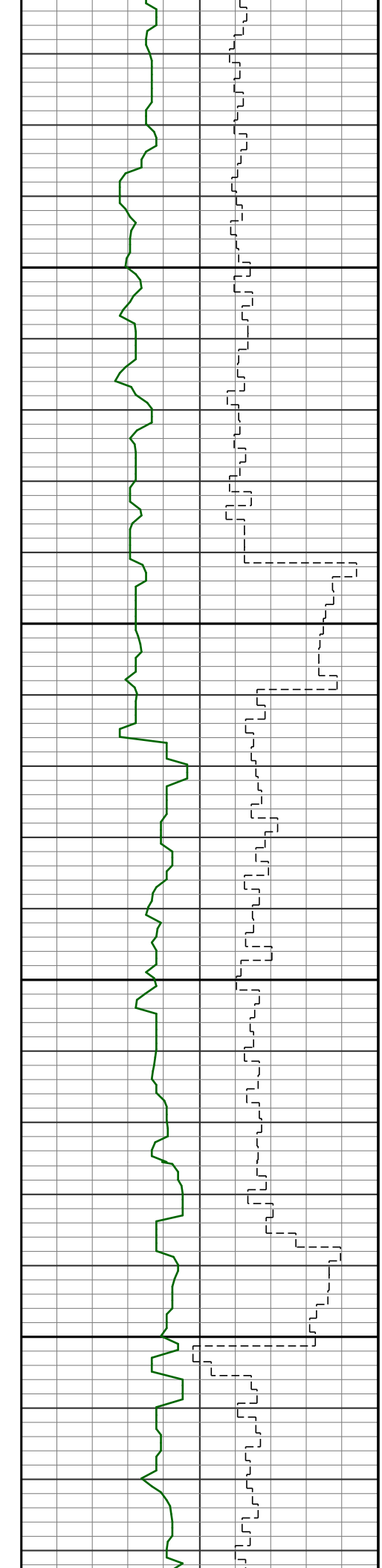


4300

11.8 117.3
46 4250

4400

9.8 115.9
47 4344



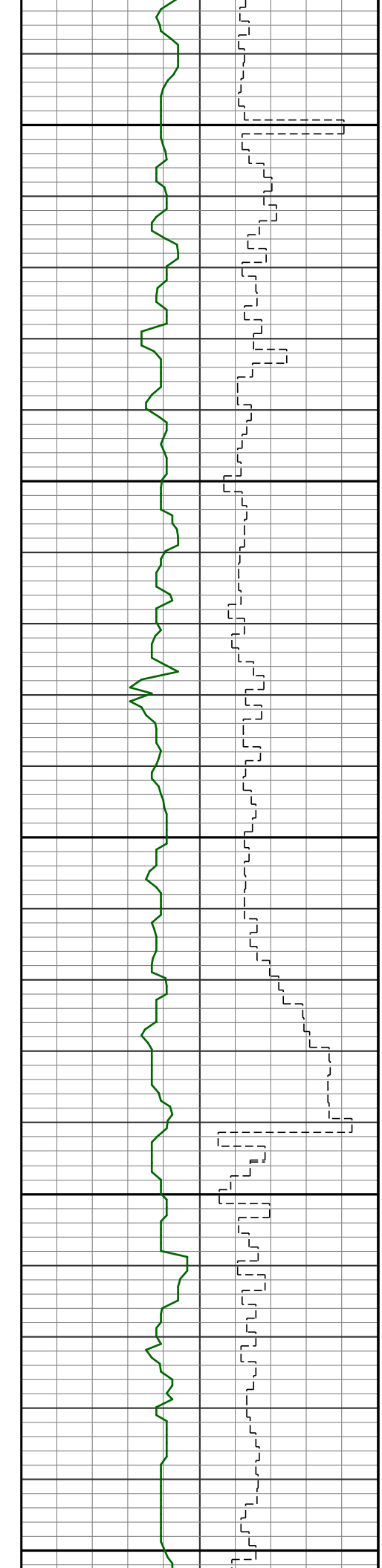
4500

S 9.7 123.8
48 4437

4600

S 10.6 127.9
49 4531

11.6 127.9



4700

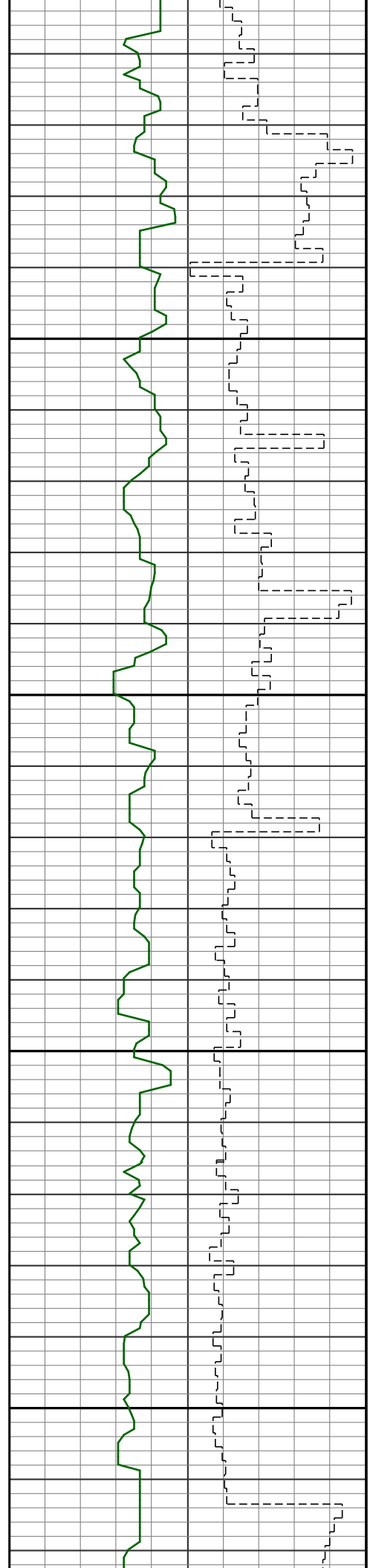
4800

4900

11.6 127.2
50 4624

10.3 128.0
51 4718

11.6 130.5
52 4812

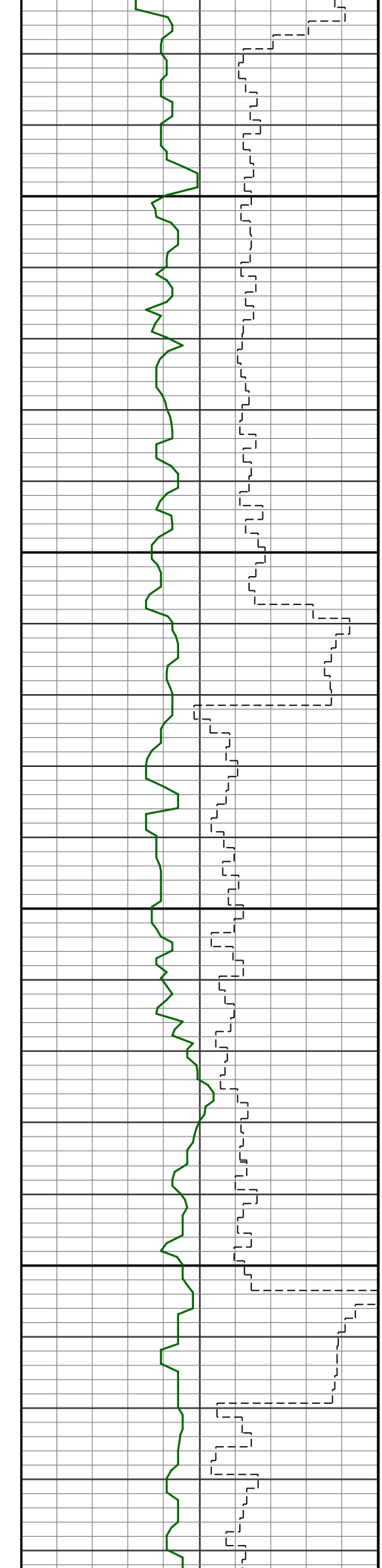


5000

5100

12.1 129.8
53 4905

11.3 129.6
54 4998

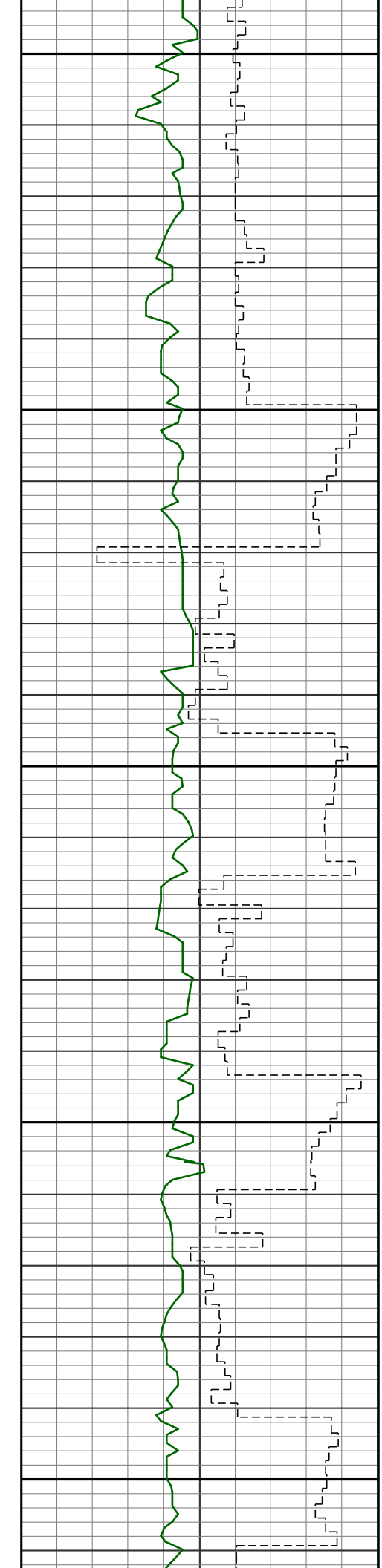


5200

5300

s 11.5 126.3
55 5092

s 10.4 121.0
56 5185



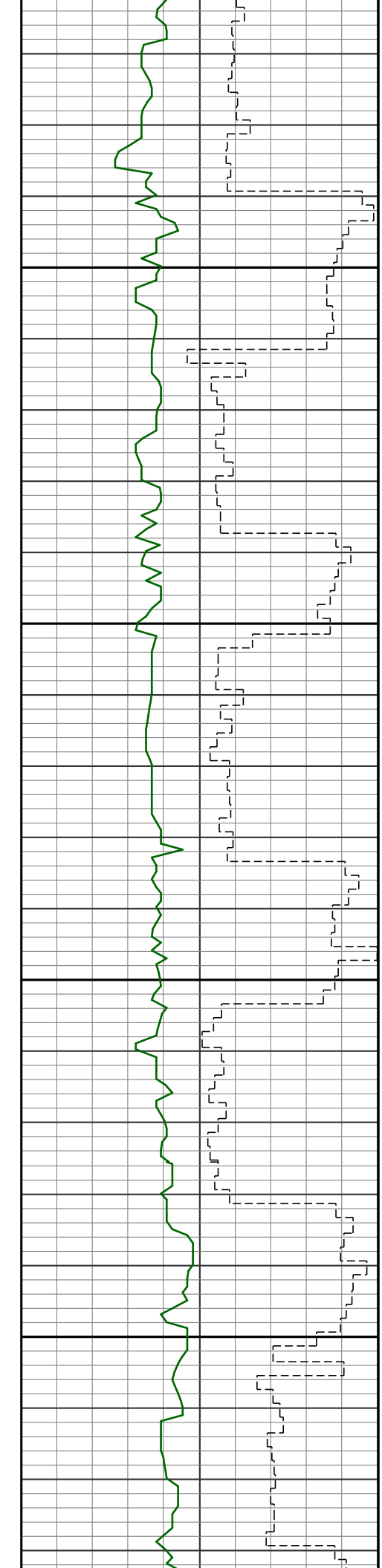
5400

5500

9.0 116.1
57 5278

9.4 120.7
58 5372

9.3 128.0
59 5466

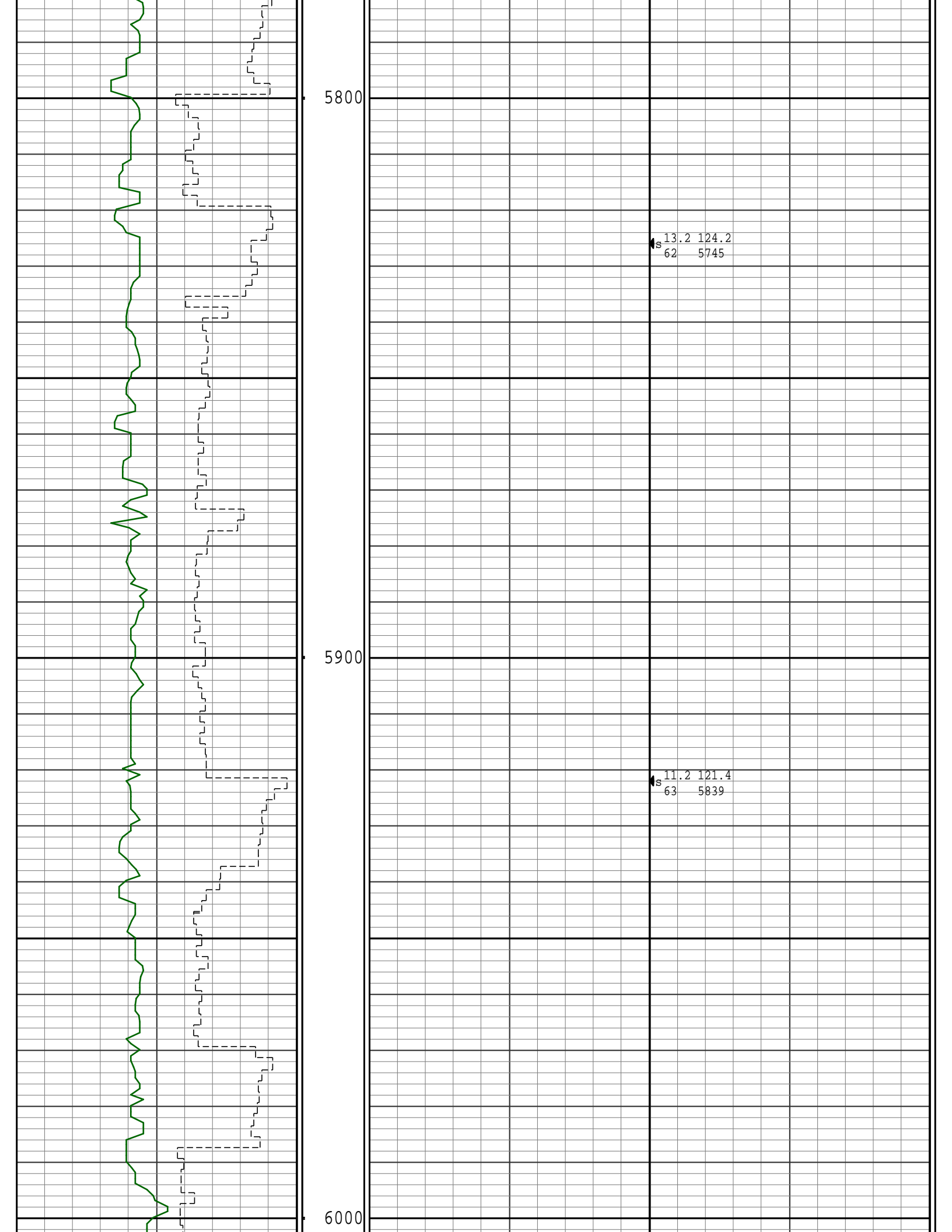


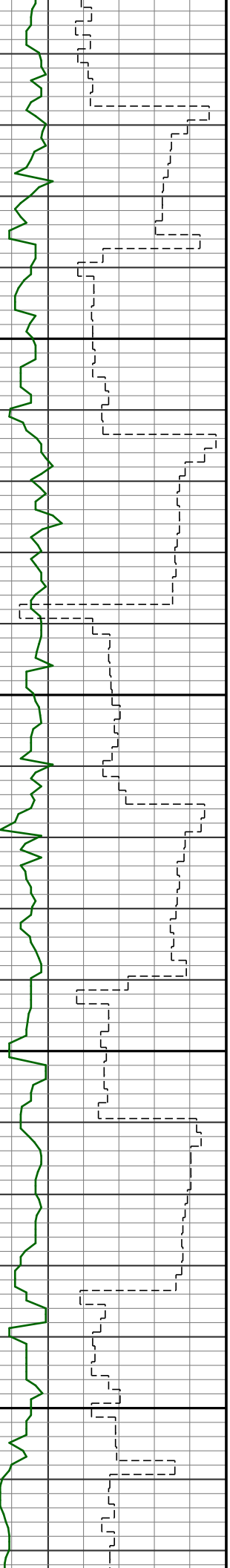
5600

s 11.1 129.1
60 5559

5700

s 11.8 126.5
61 5652





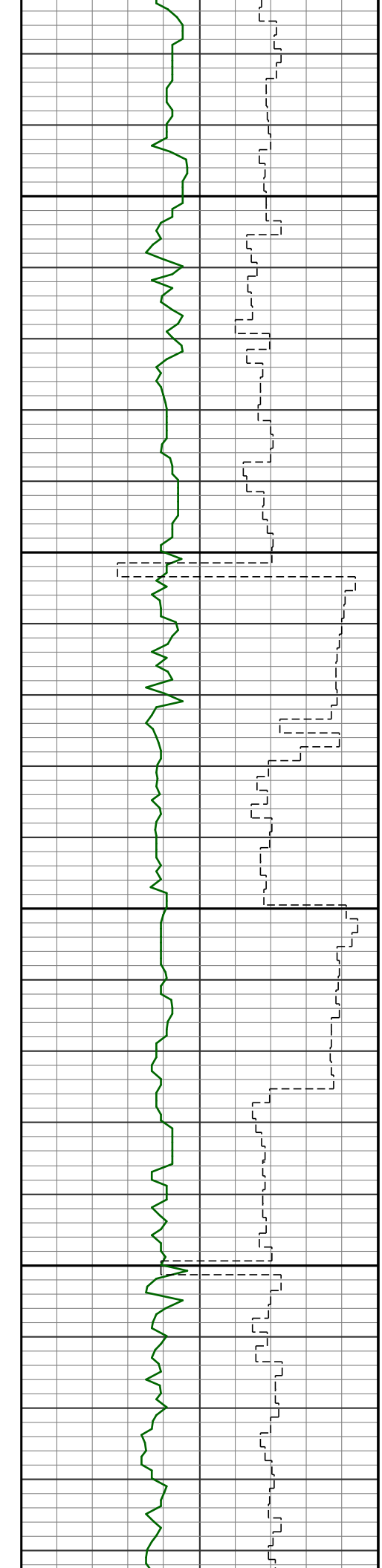
6100

6200

S 11.7 123.5
64 5932

S 12.3 127.3
65 6025

S 13.2 127.5
66 6118

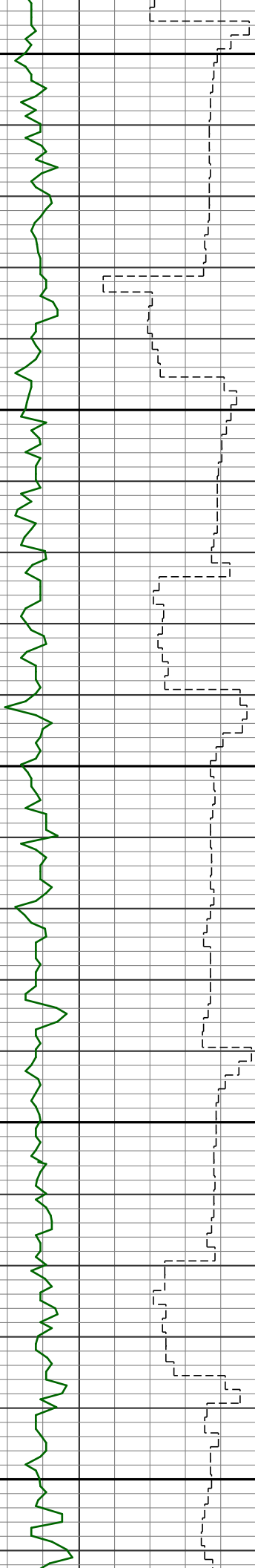


6300

s 9.6 123.1
67 6212

6400

s 9.8 120.0
68 6305



6500

6600

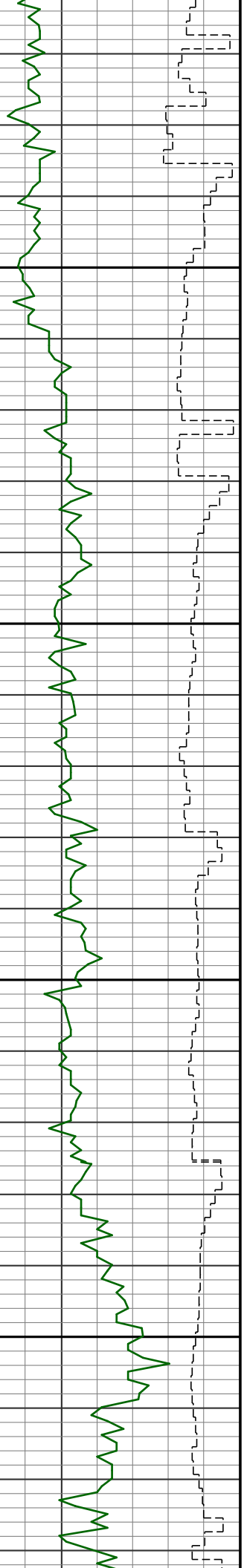
s 8.6 113.1
69 6353

s 10.0 100.6
70 6399

s 10.9 96.2
71 6446

s 12.8 64.9
72 6492

s 14.3 56.0
73 6539



6700

6800

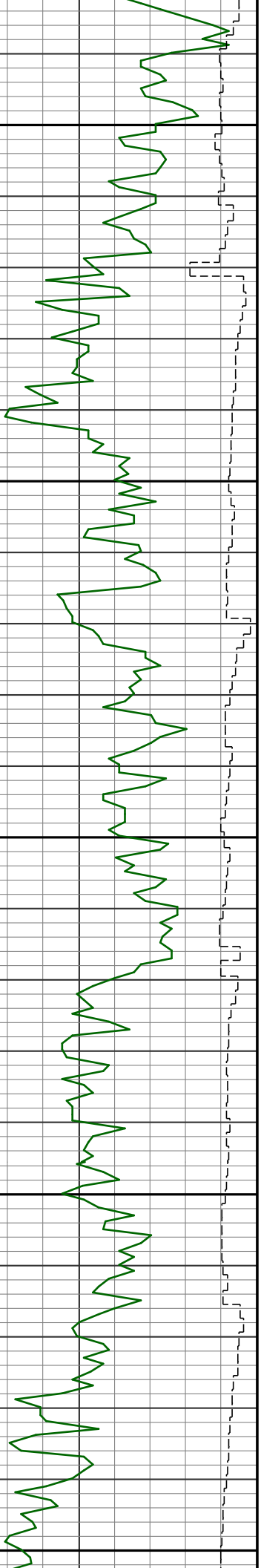
s 16.1 49.8
74 6584

s 19.3 49.6
75 6630

s 21.8 40.0
76 6674

s 24.7 31.2
77 6718

s 27.7 23.5
78 6761



6900

s 31.2 18.9
79 6802

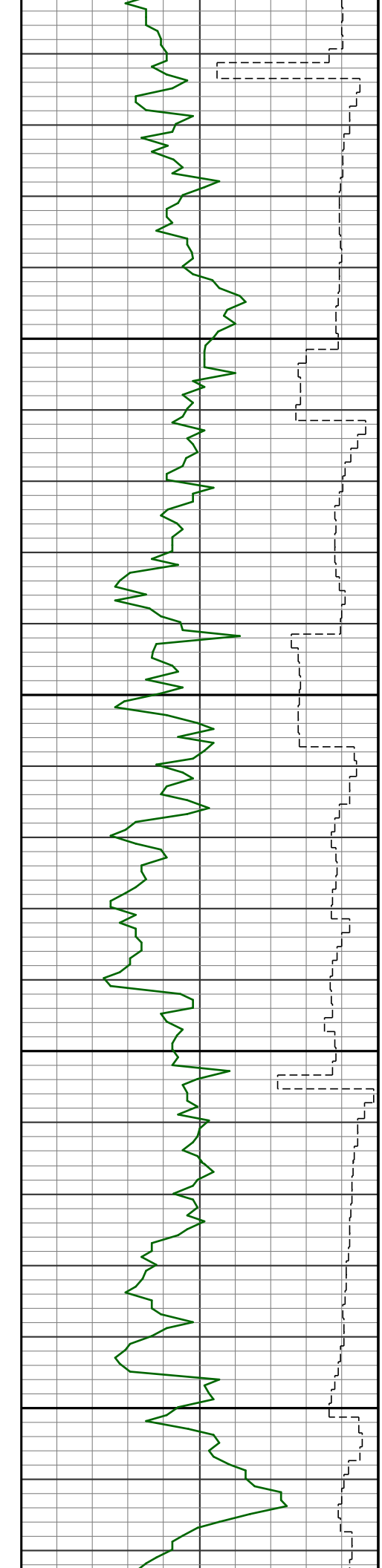
s 35.4 15.7
80 6842

7000

s 39.8 11.5
81 6880

s 44.5 8.7
82 6915

7100



7200

7300

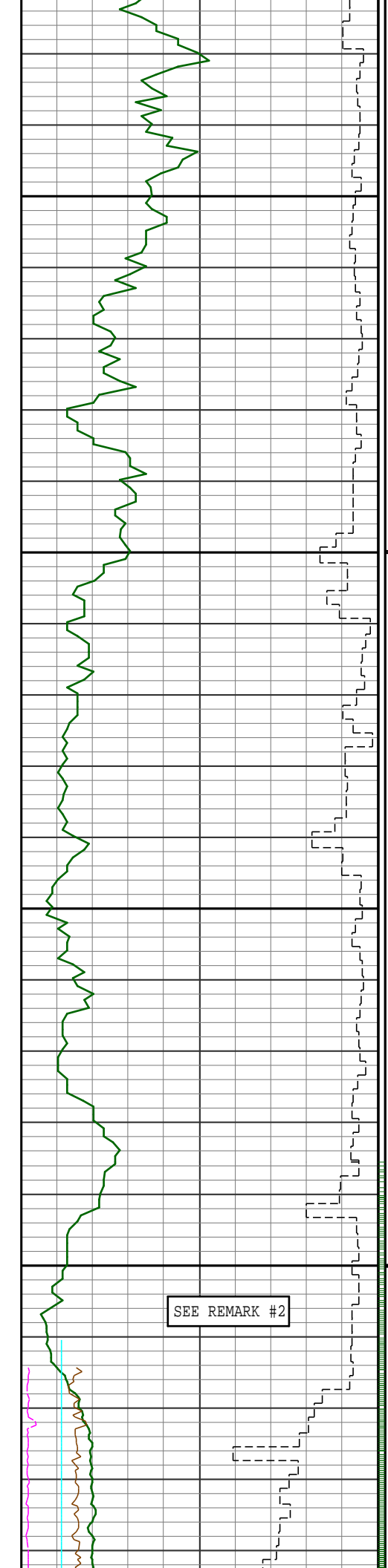
s 50.1 8.0
83 6948

s 53.9 7.6
84 6977

s 55.8 5.7
85 7004

s 60.1 5.4
86 7029

s 65.2 4.5
87 7049



7400

7500

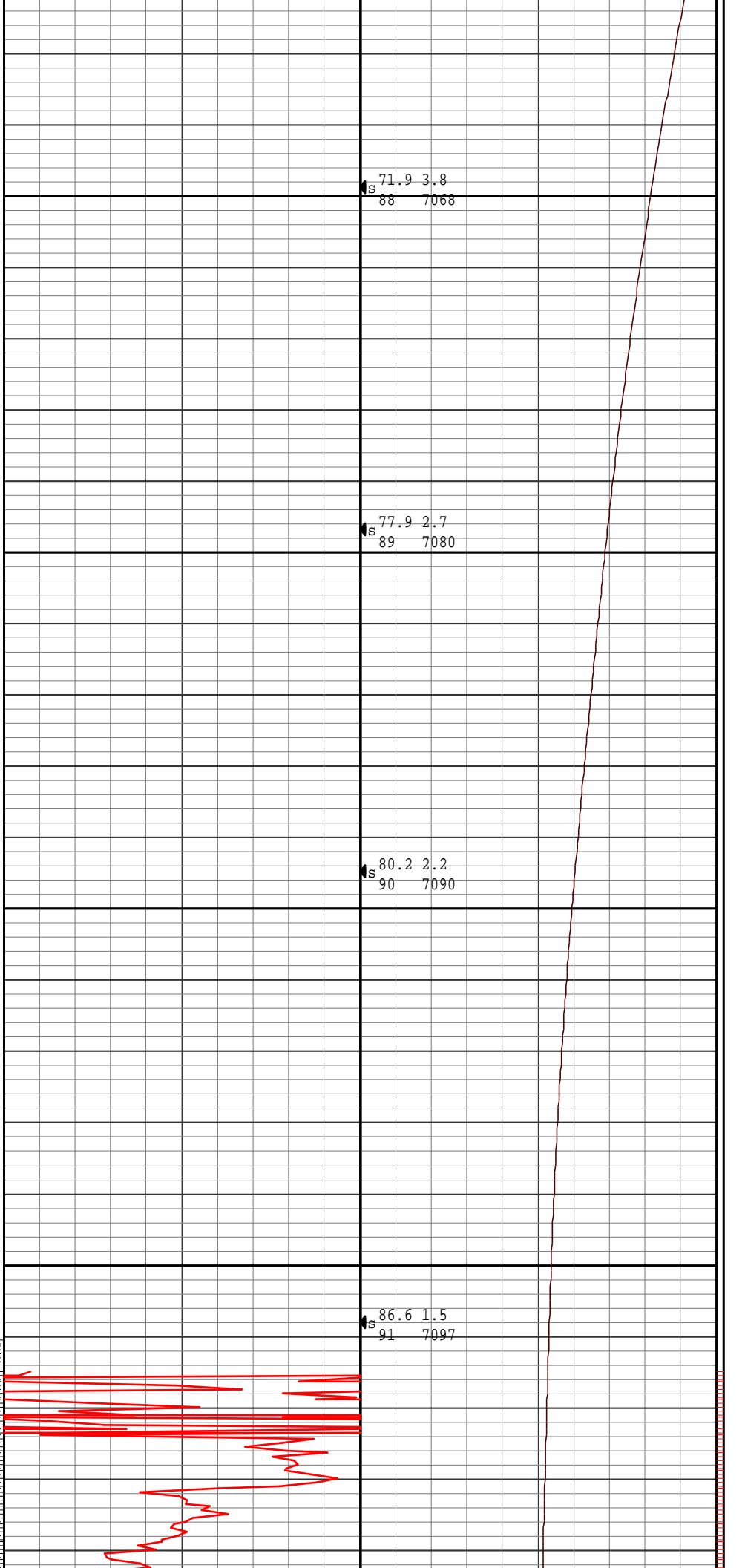
7"
CASING

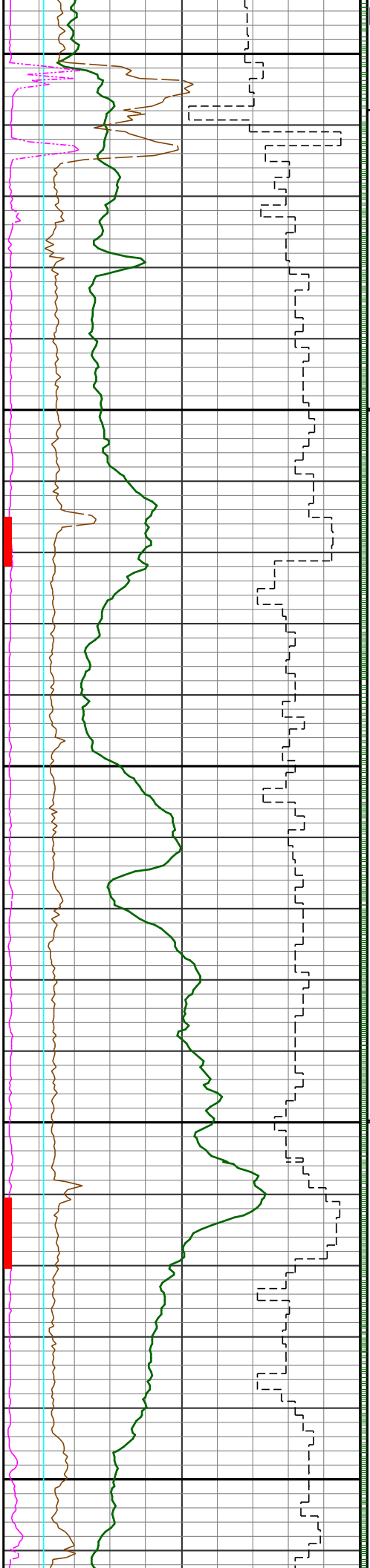
S 71.9 3.8
88 7068

S 77.9 2.7
89 7080

S 80.2 2.2
90 7090

S 86.6 1.5
91 7097

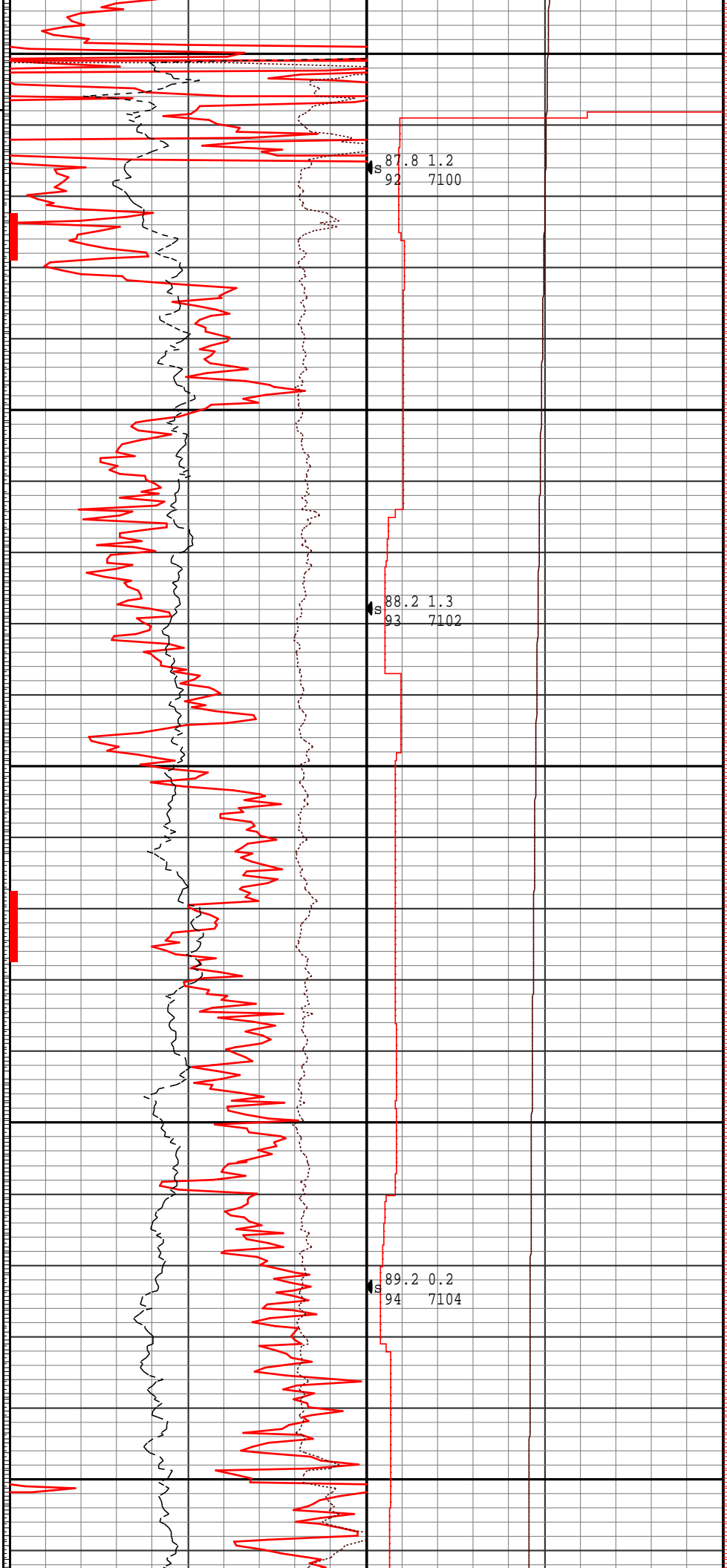


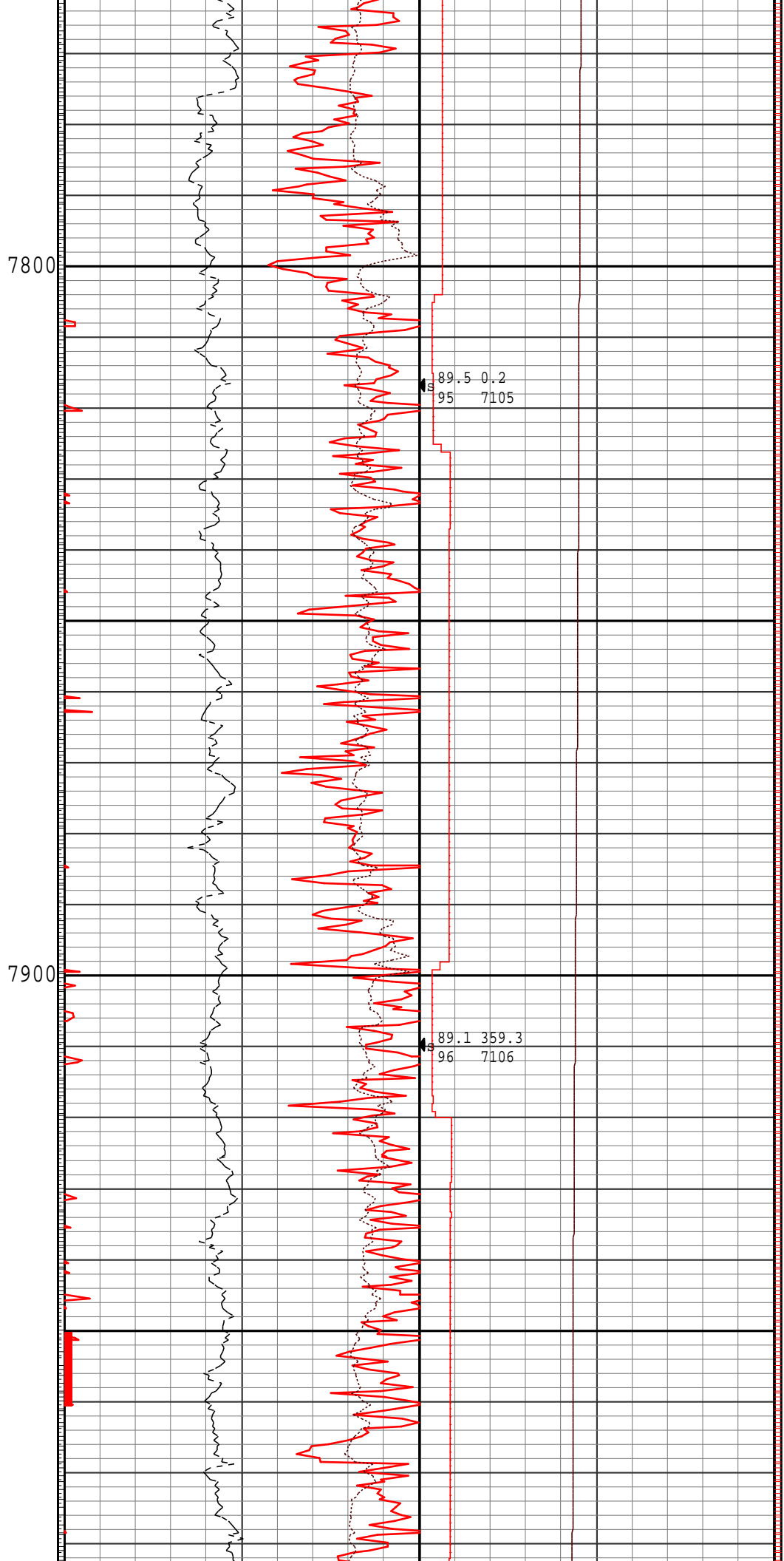
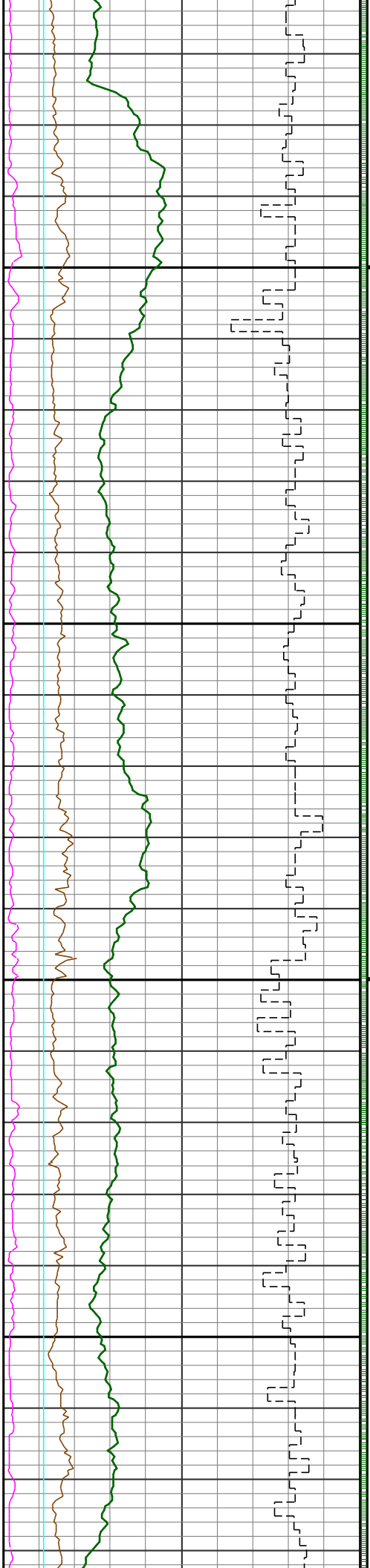


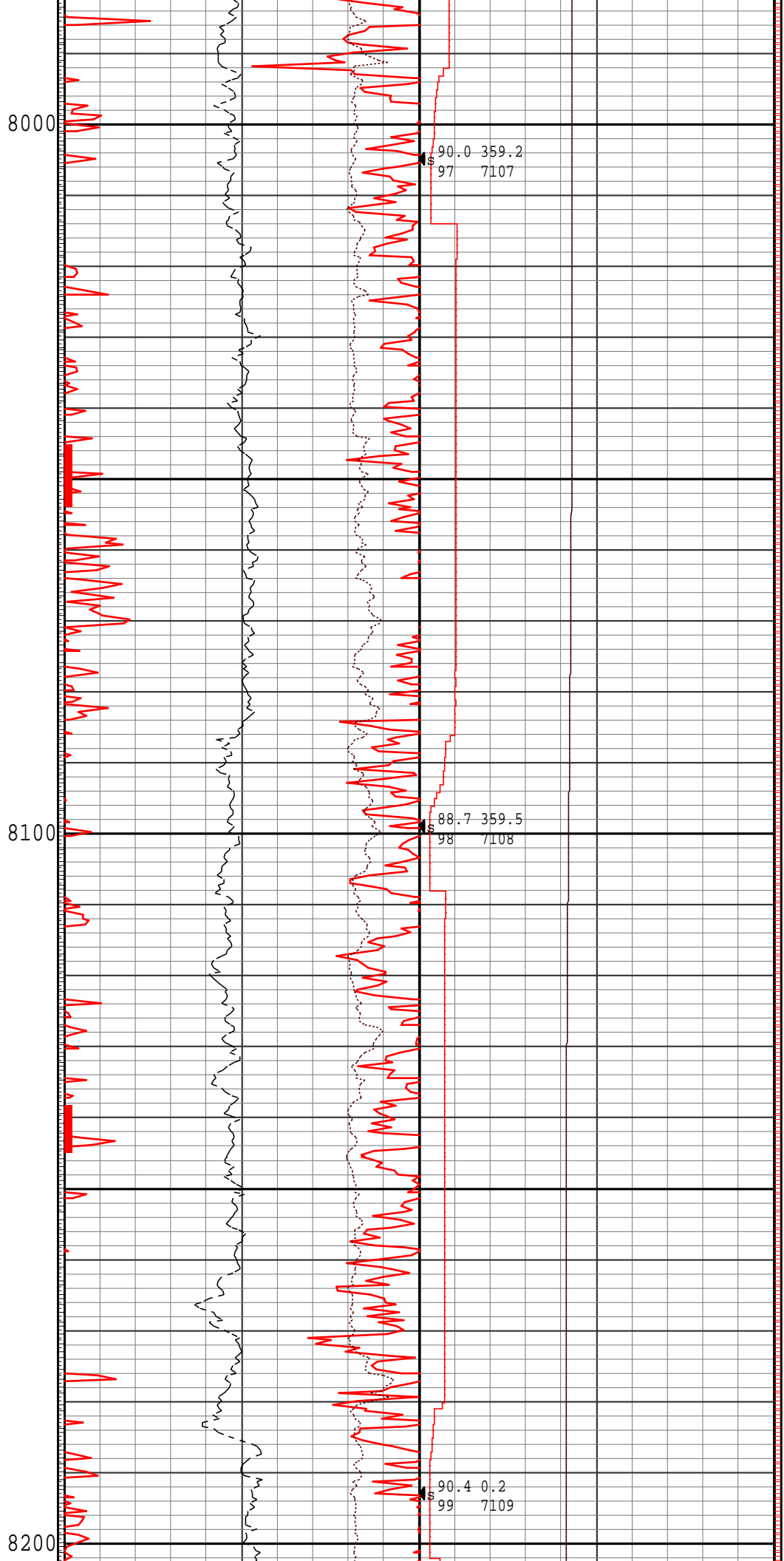
R
U
N
#1

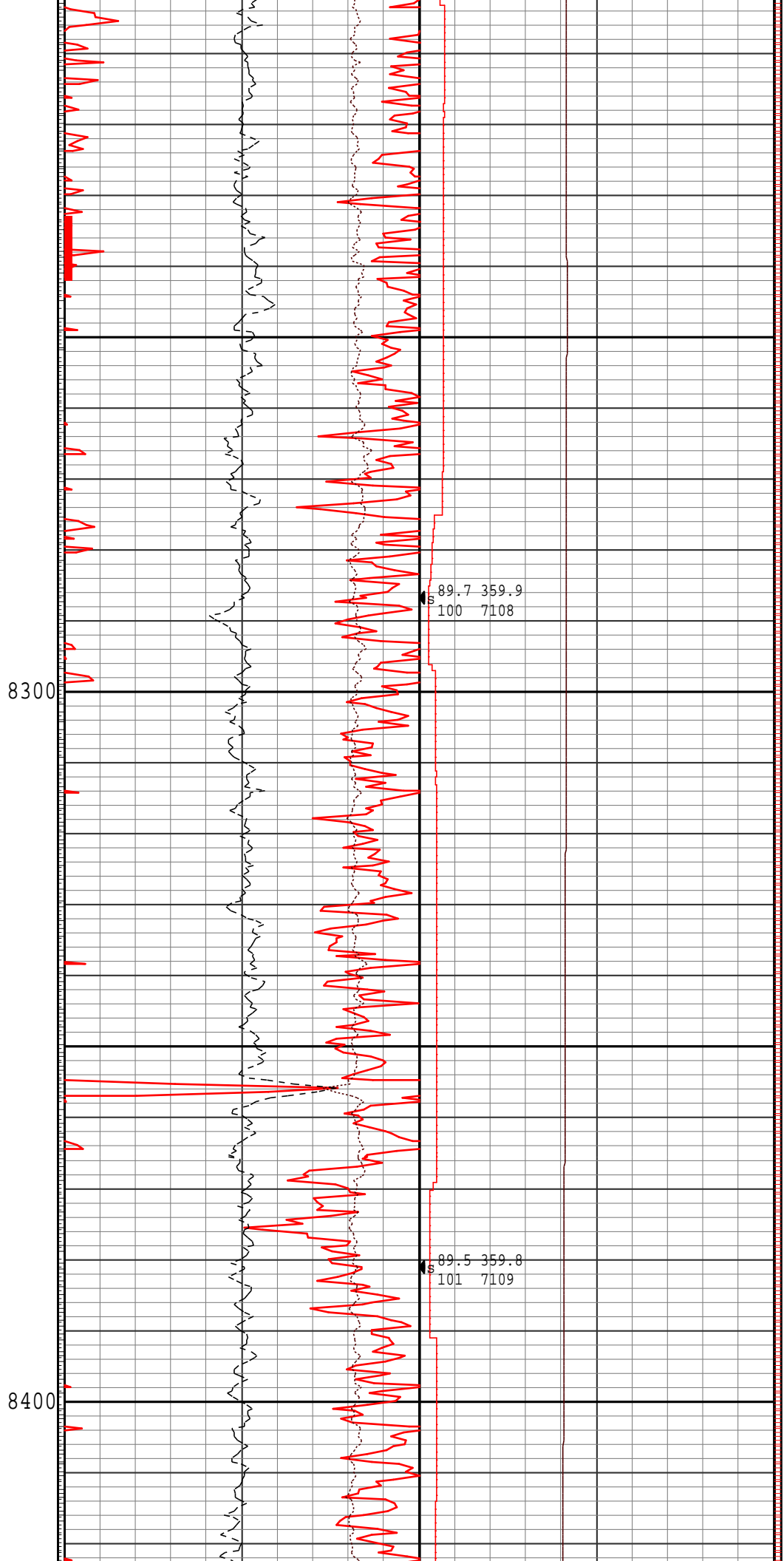
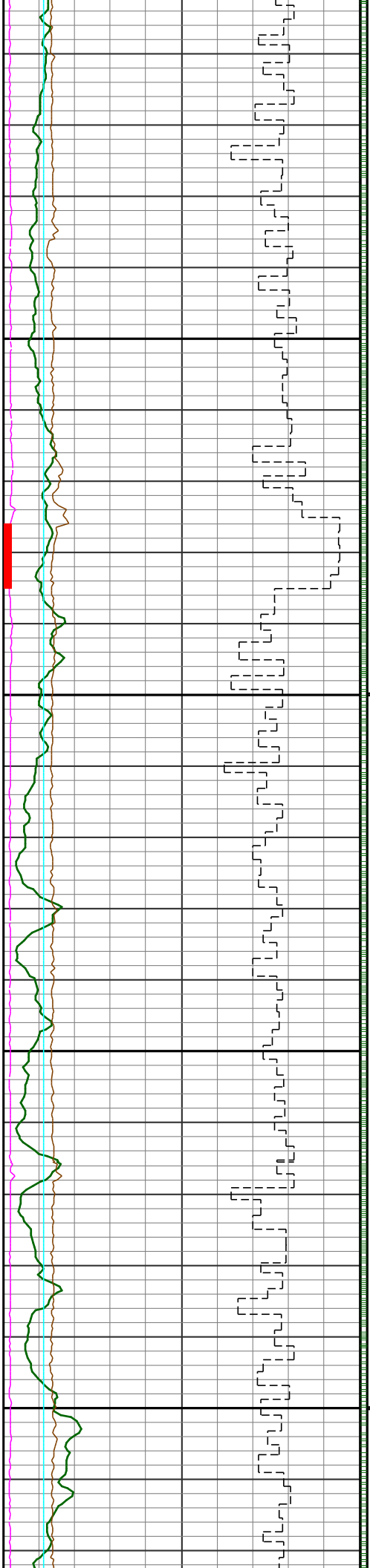
7600

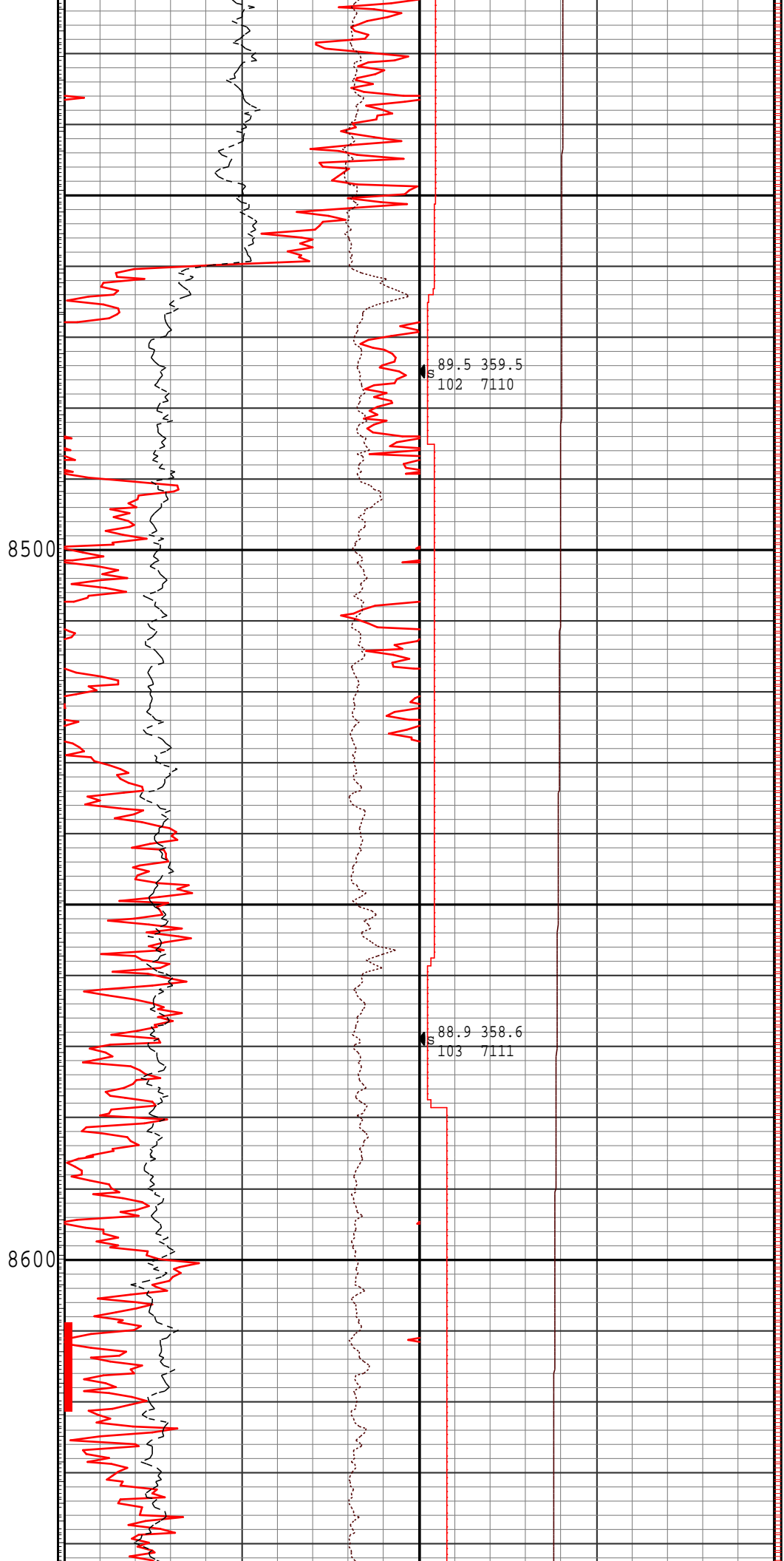
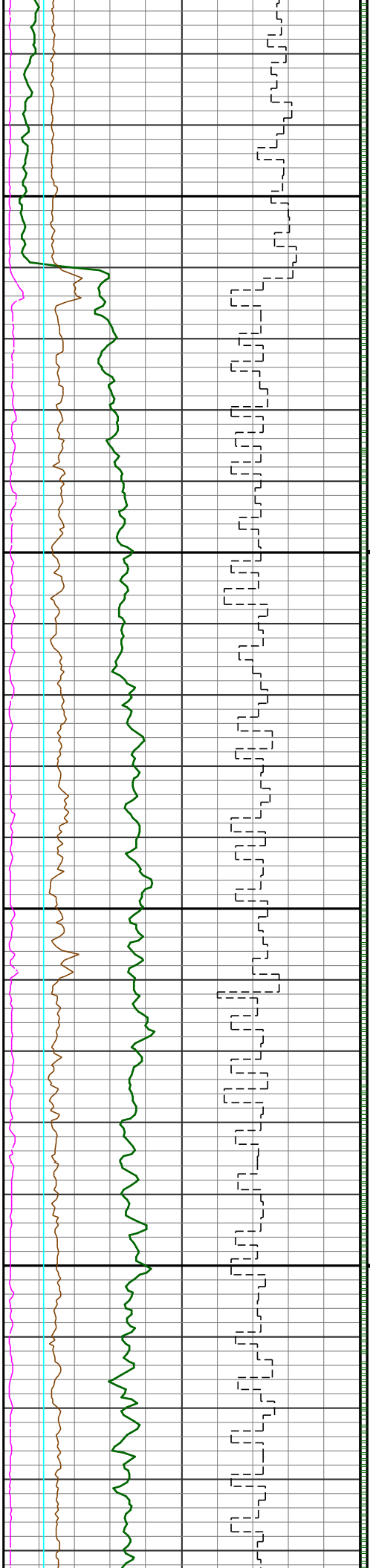
7700

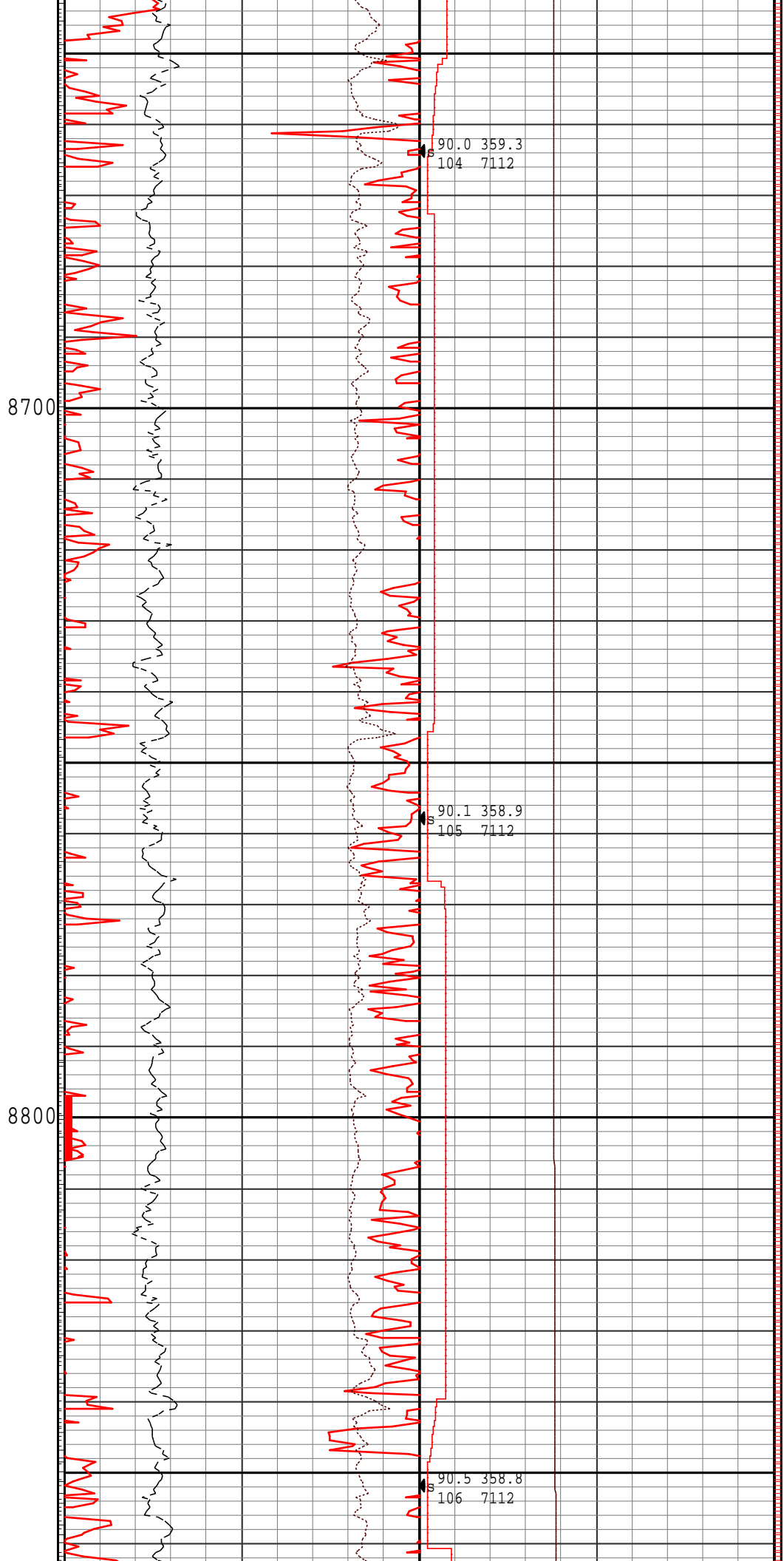
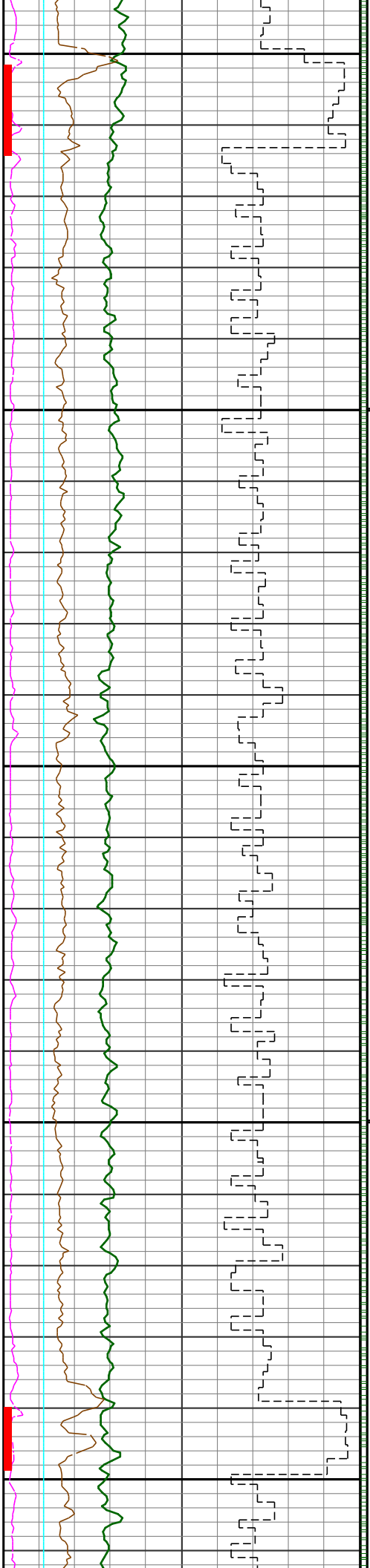


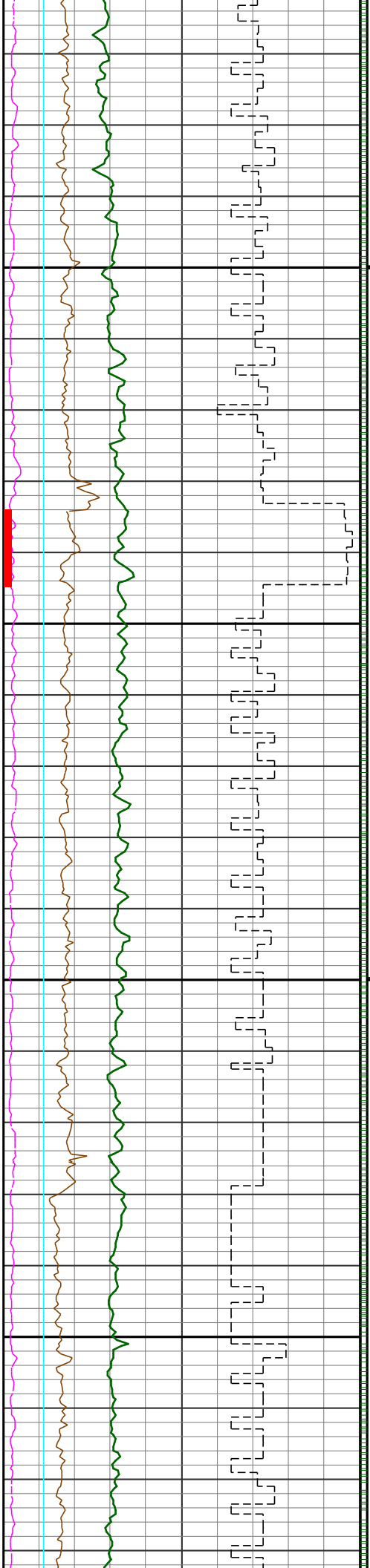






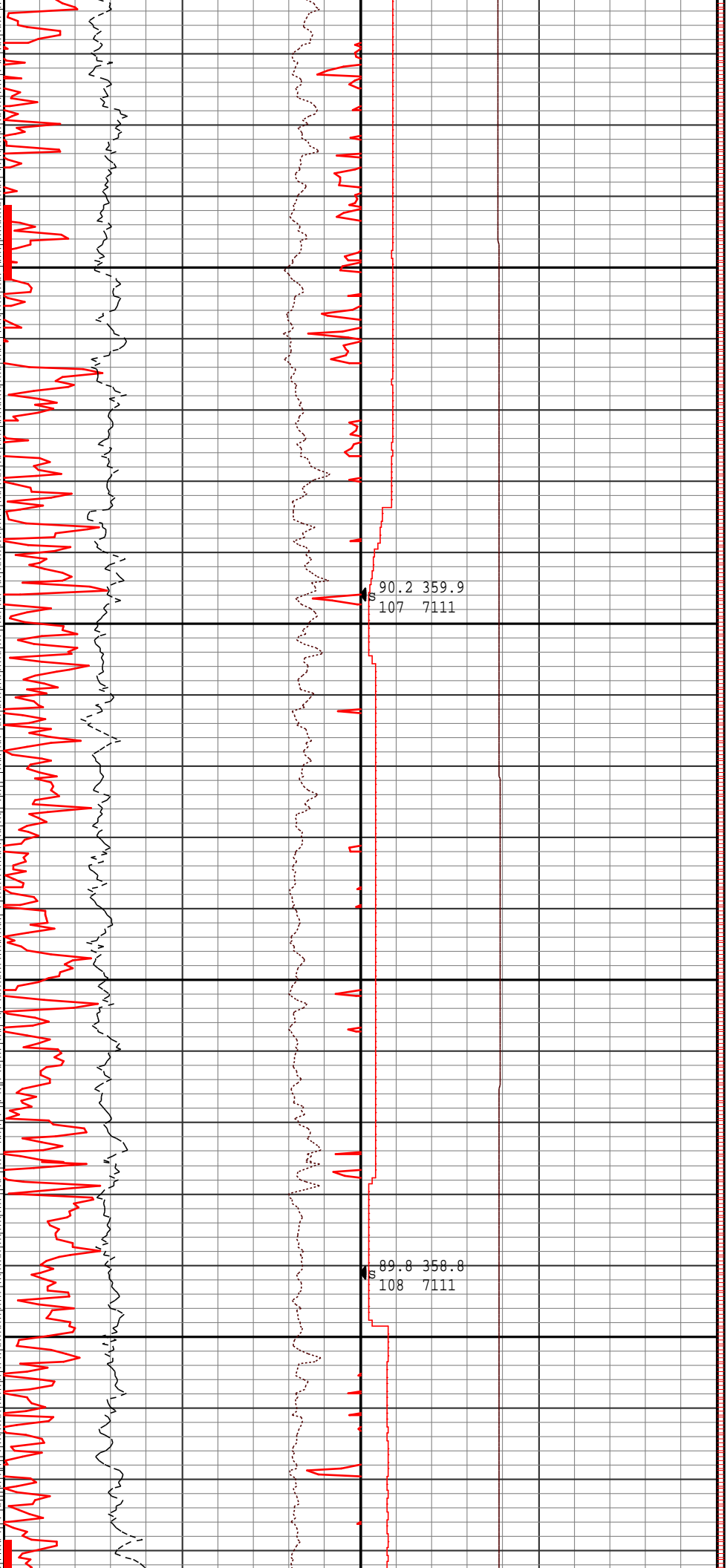






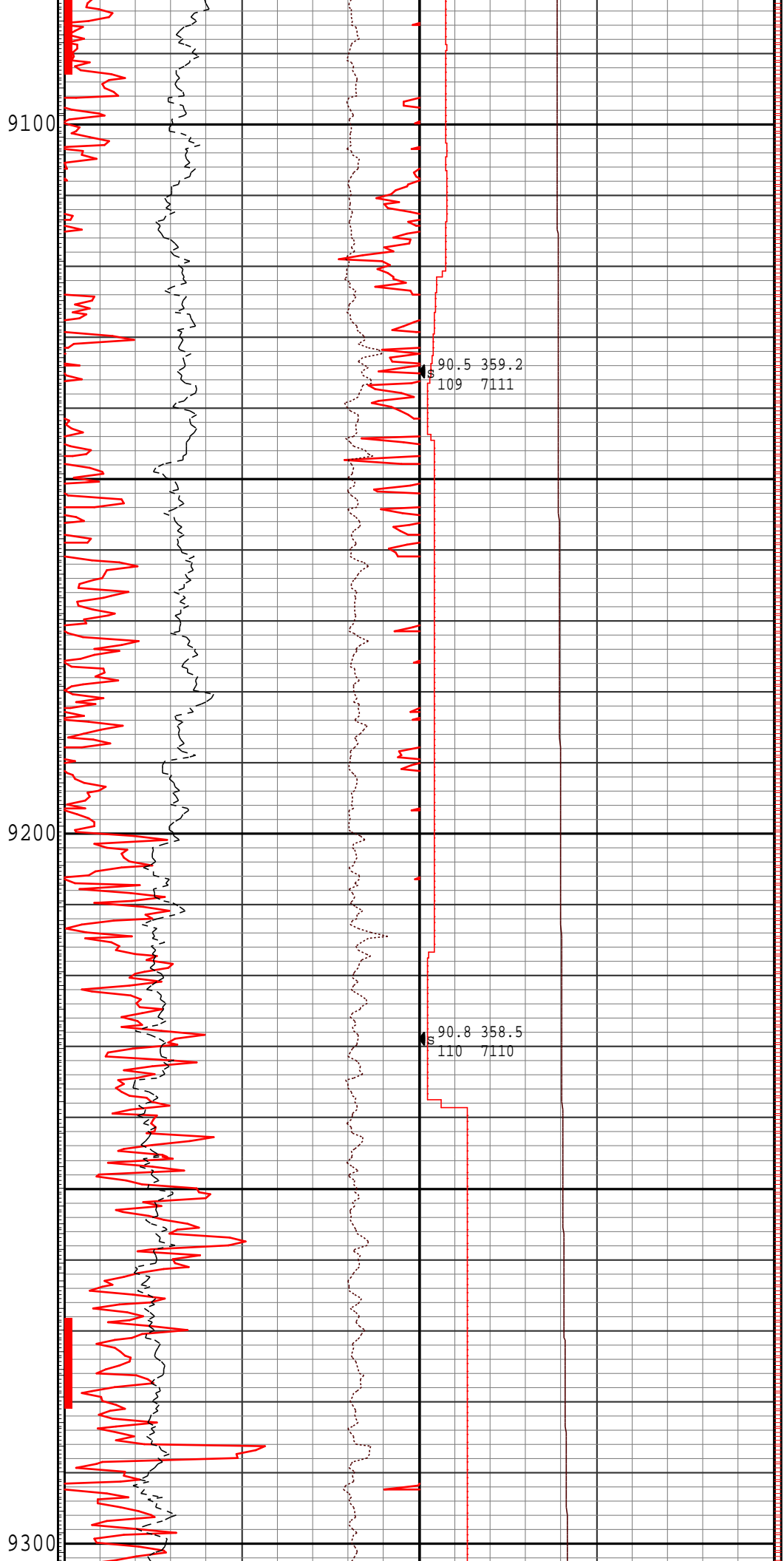
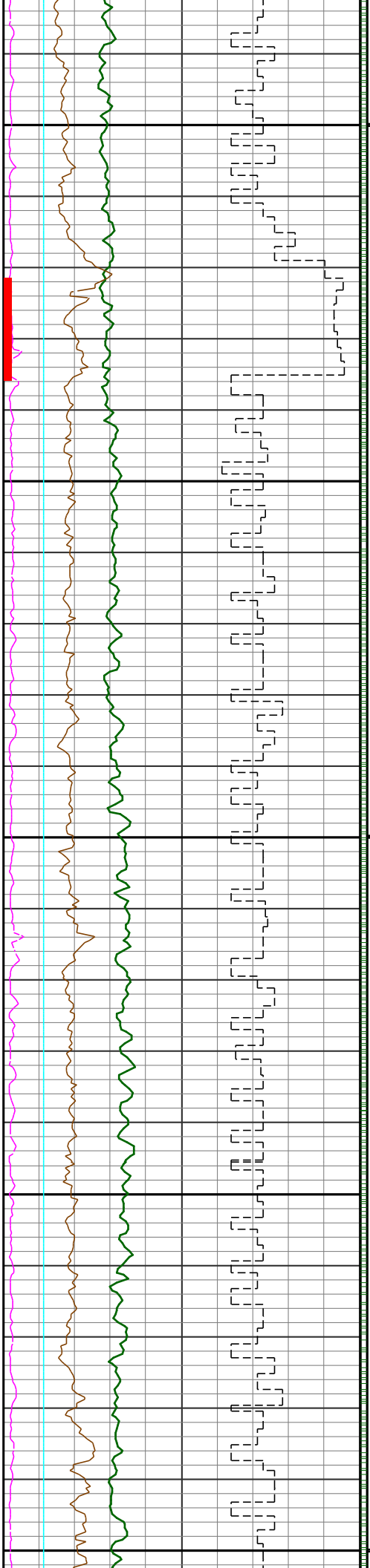
8900

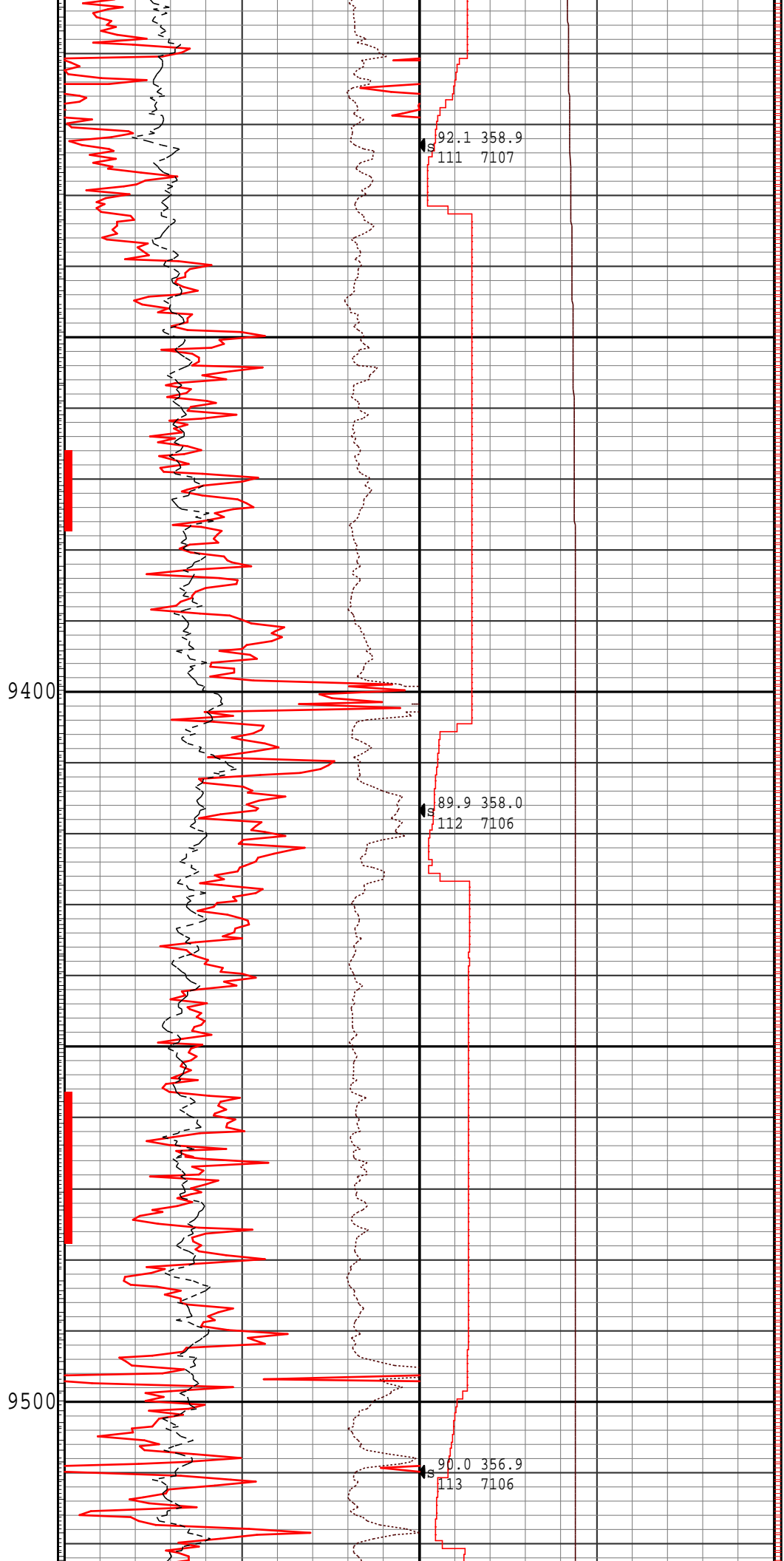
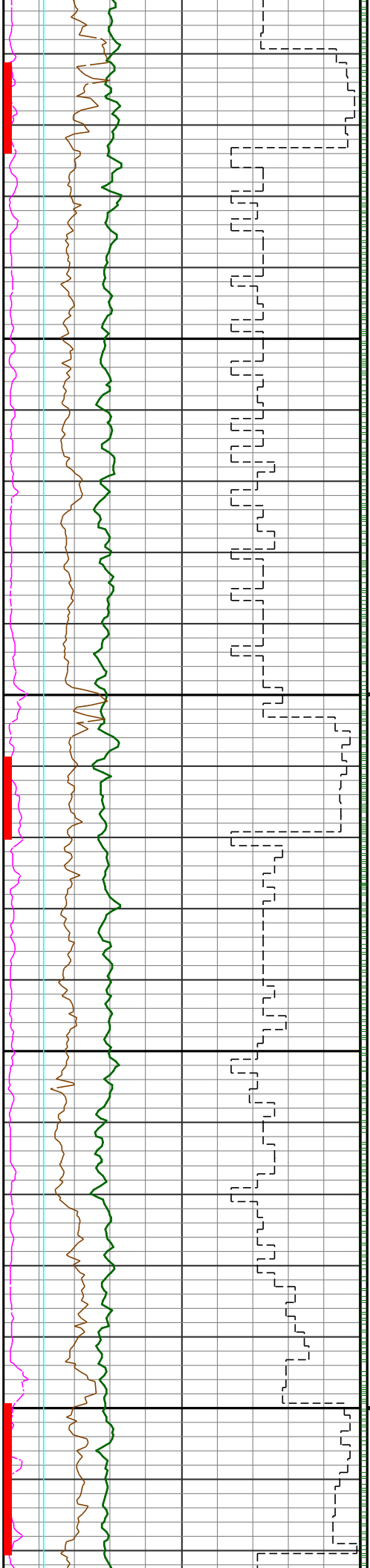
9000

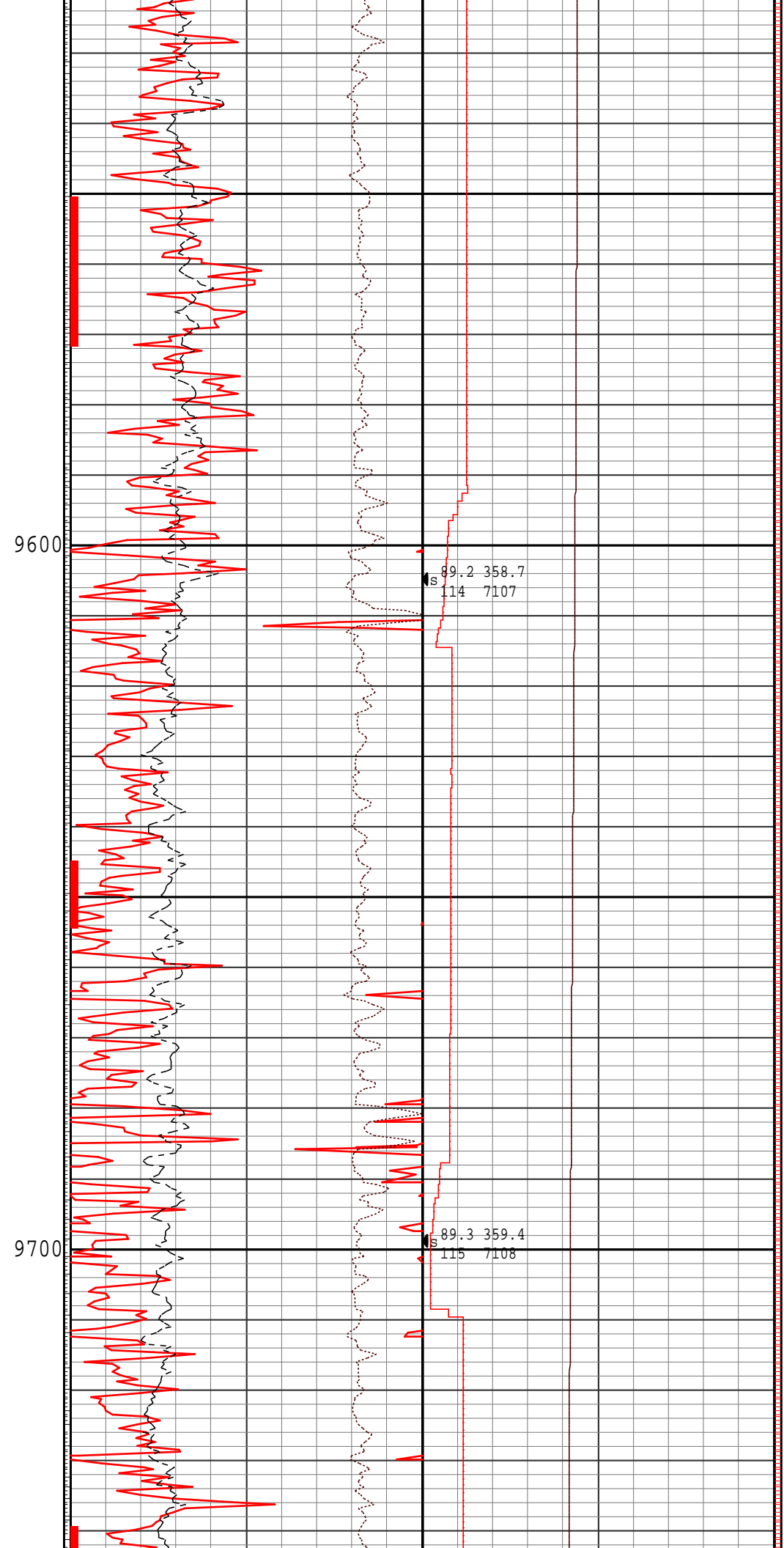
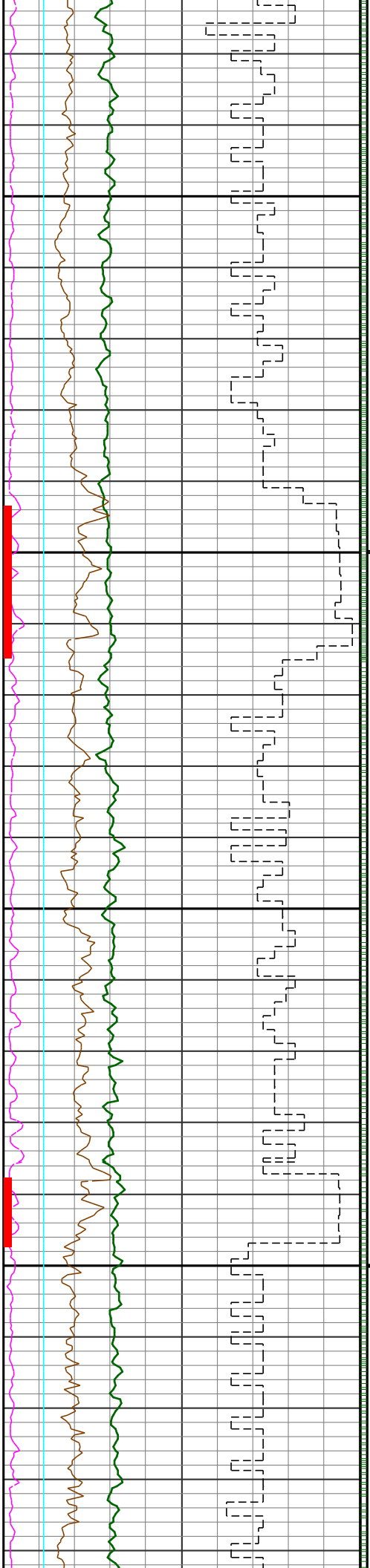


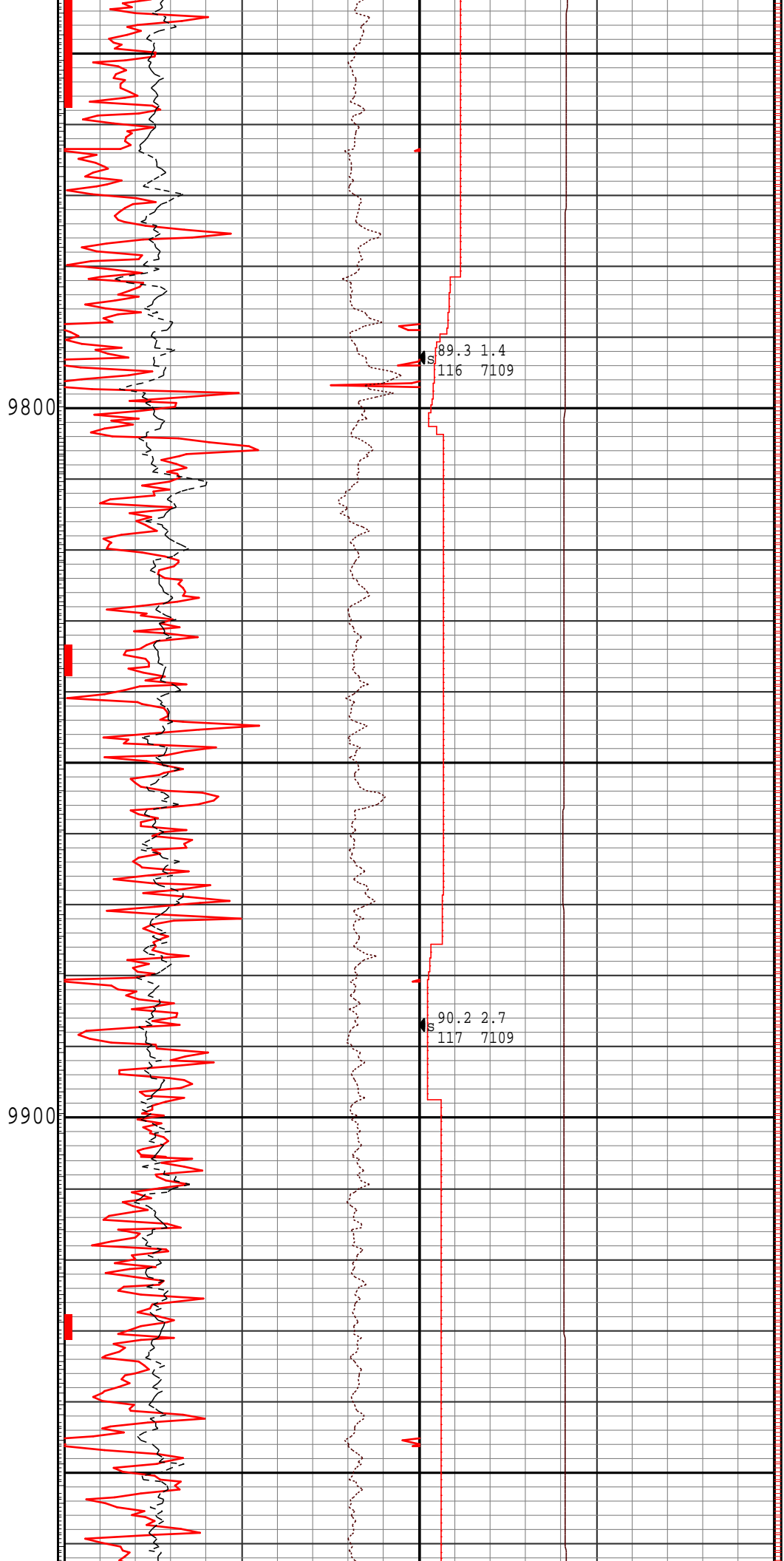
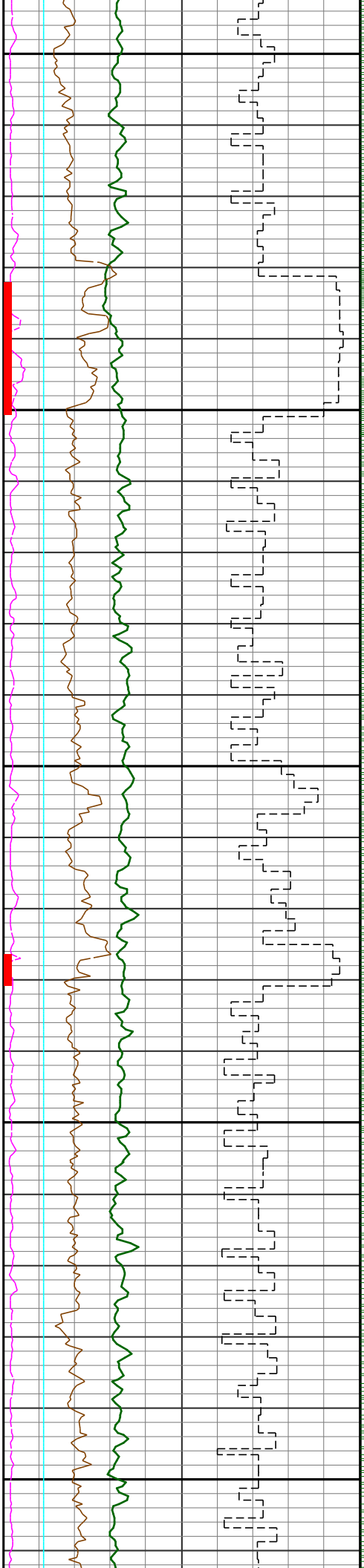
90.2 359.9
107 7111

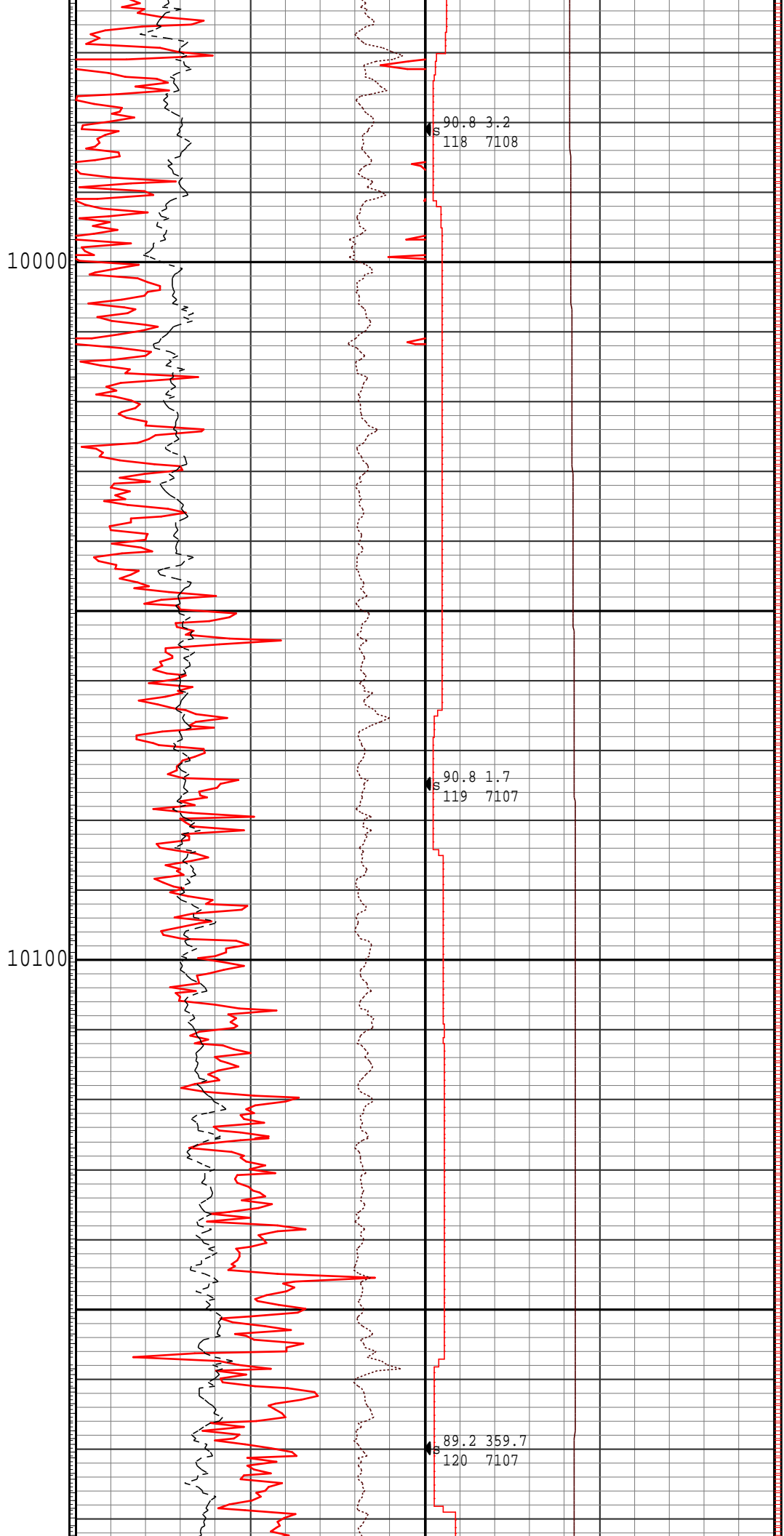
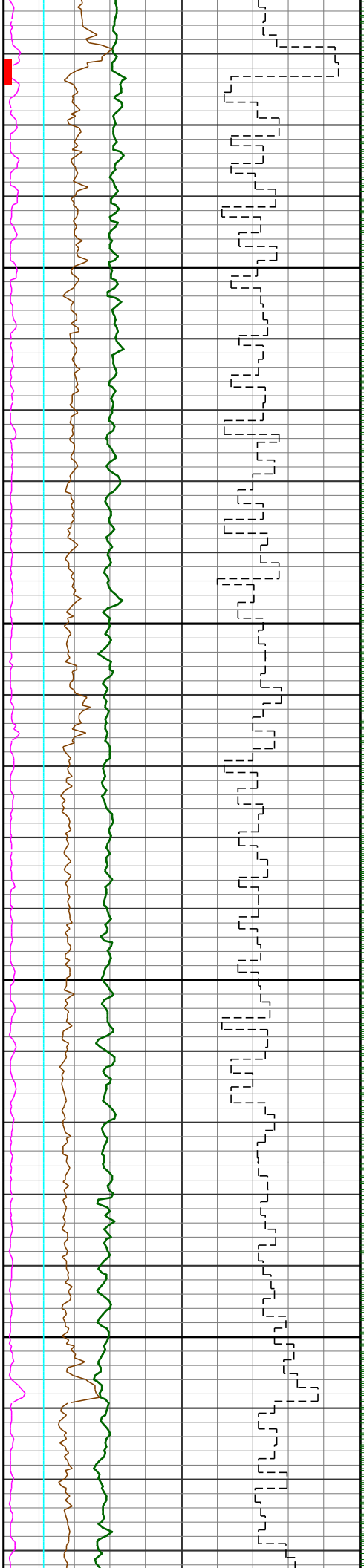
89.8 358.8
108 7111

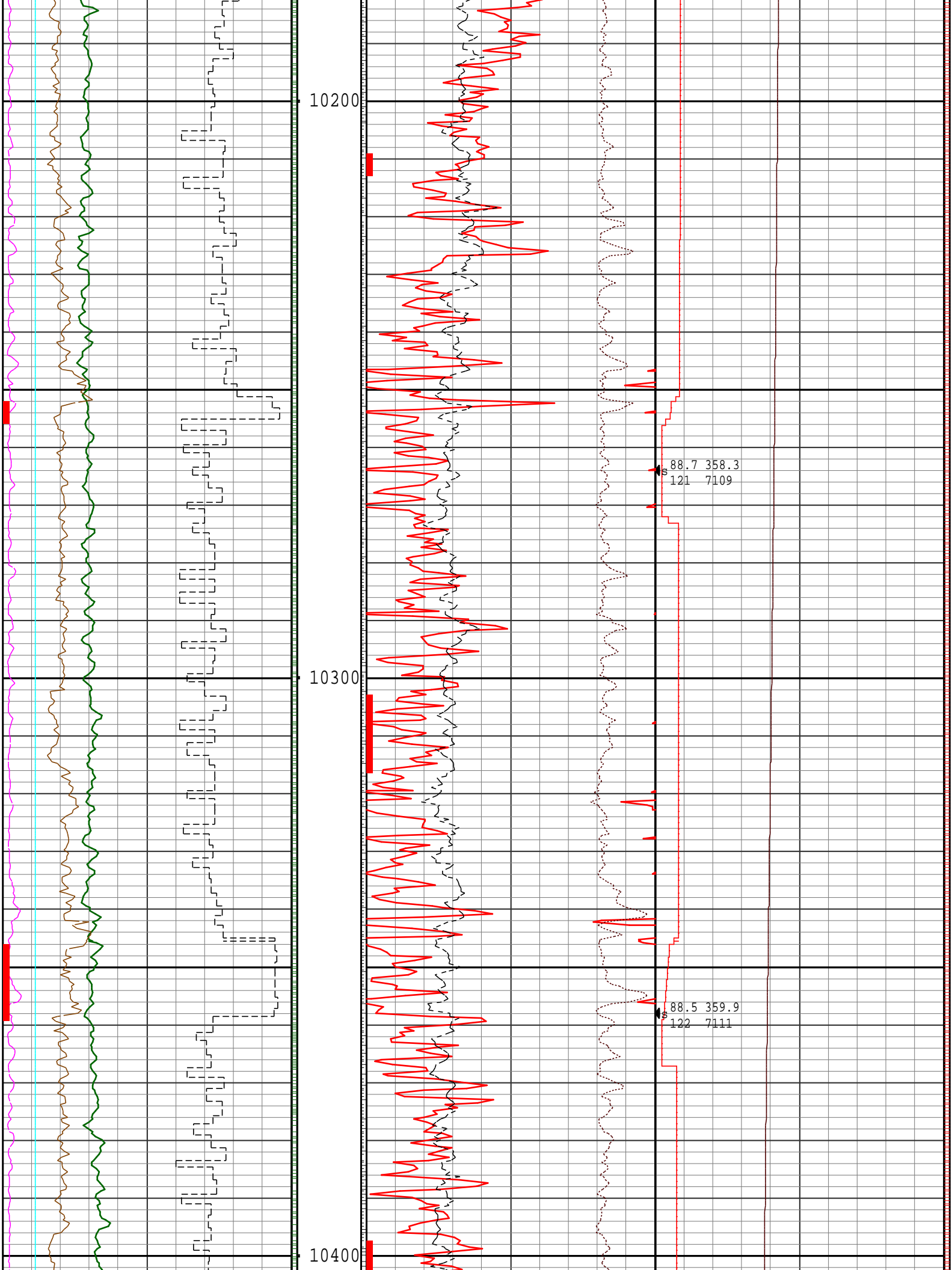


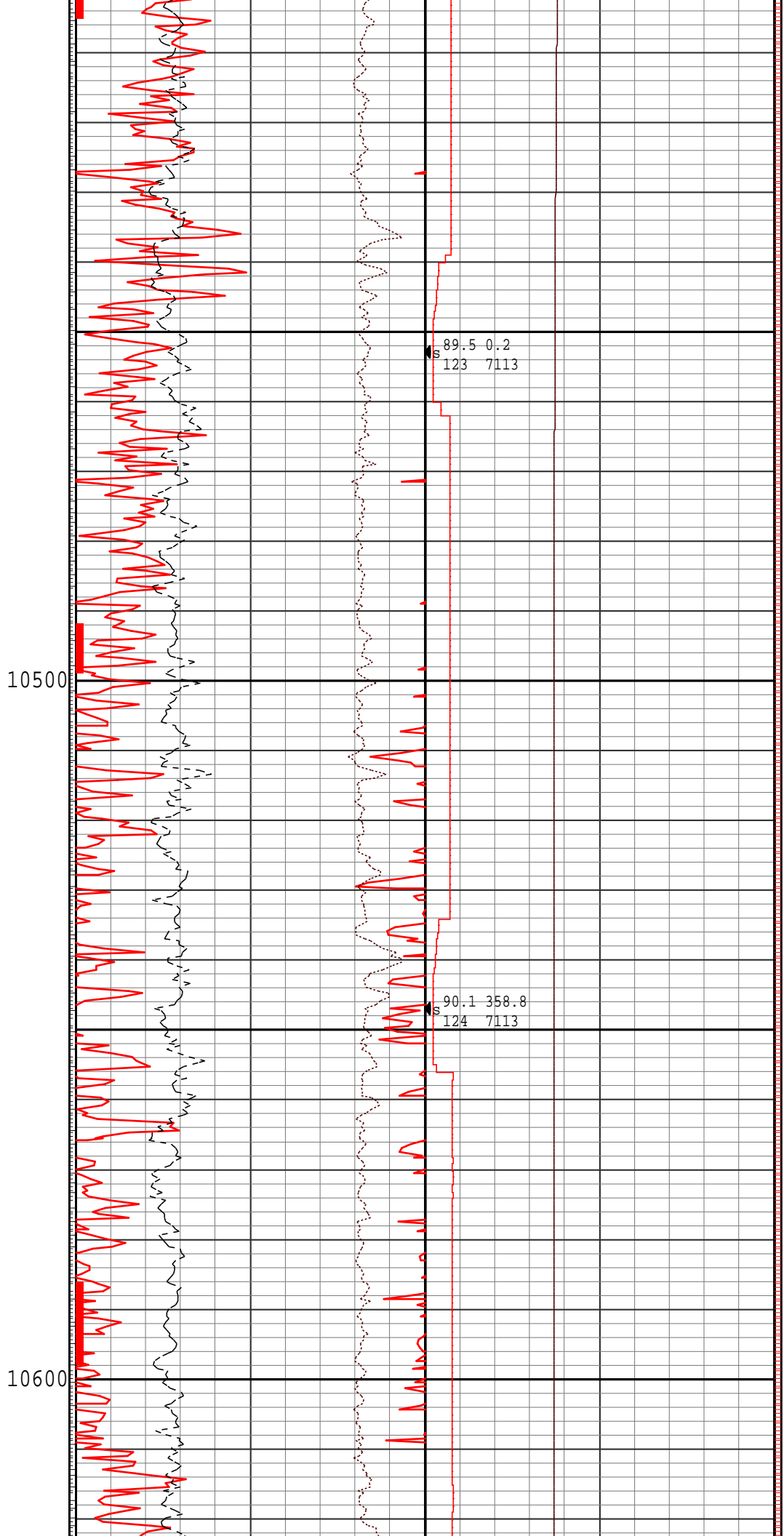
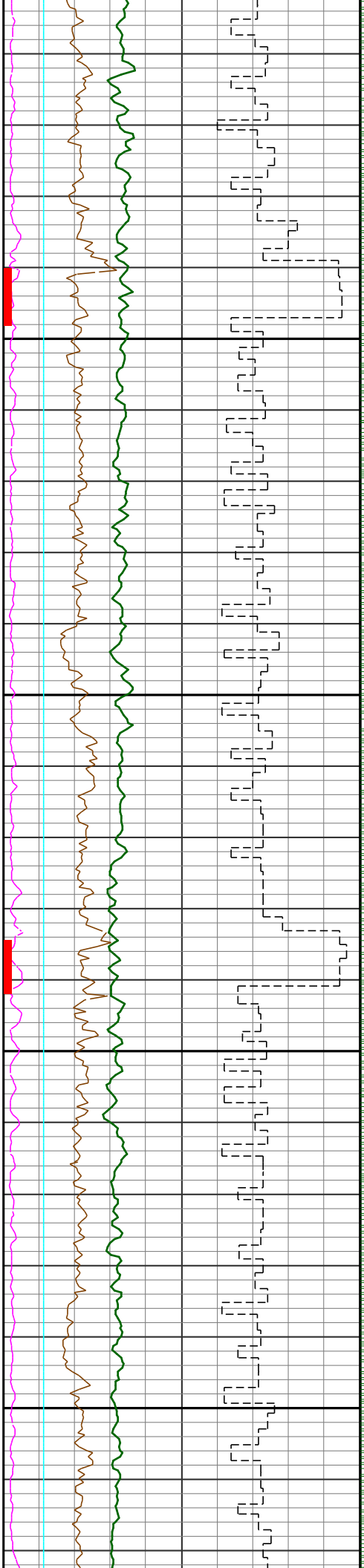


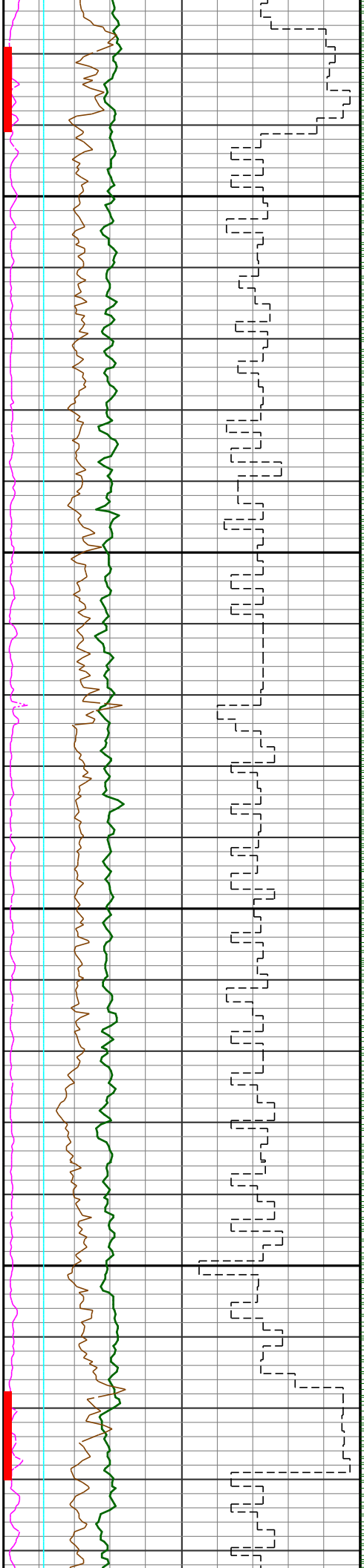






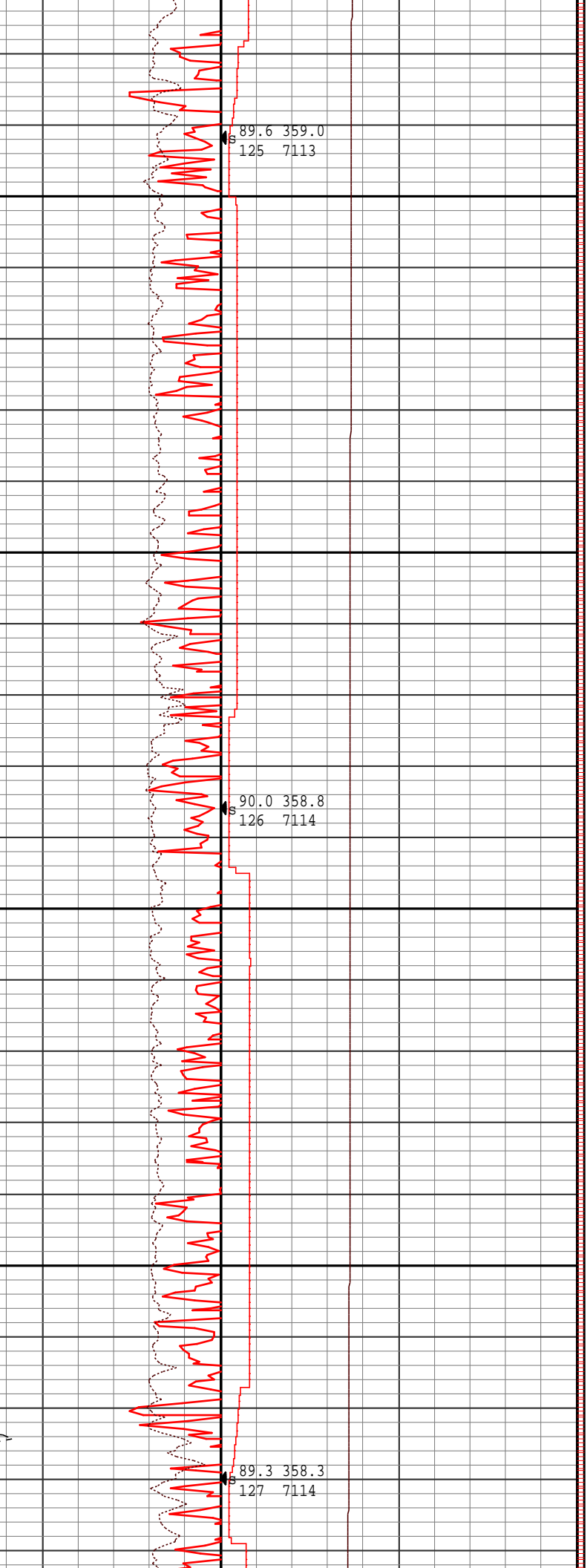
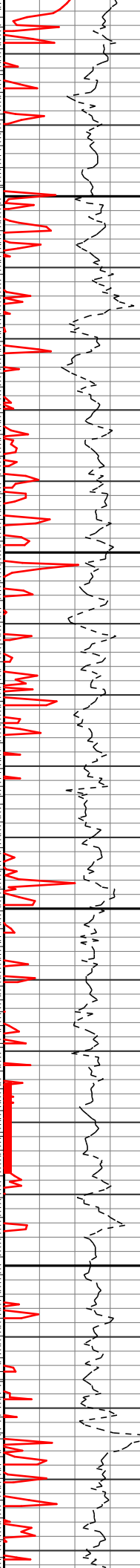






10700

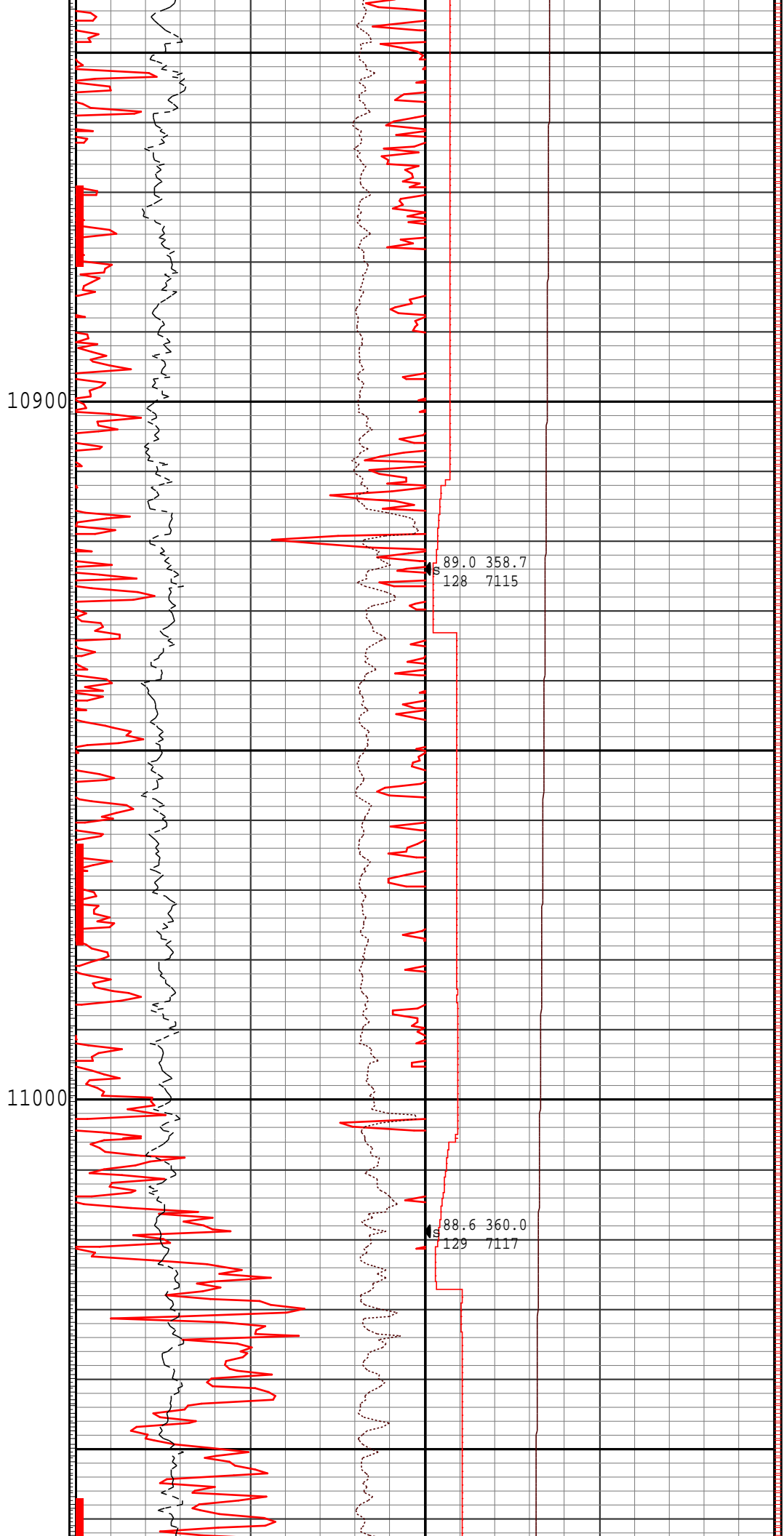
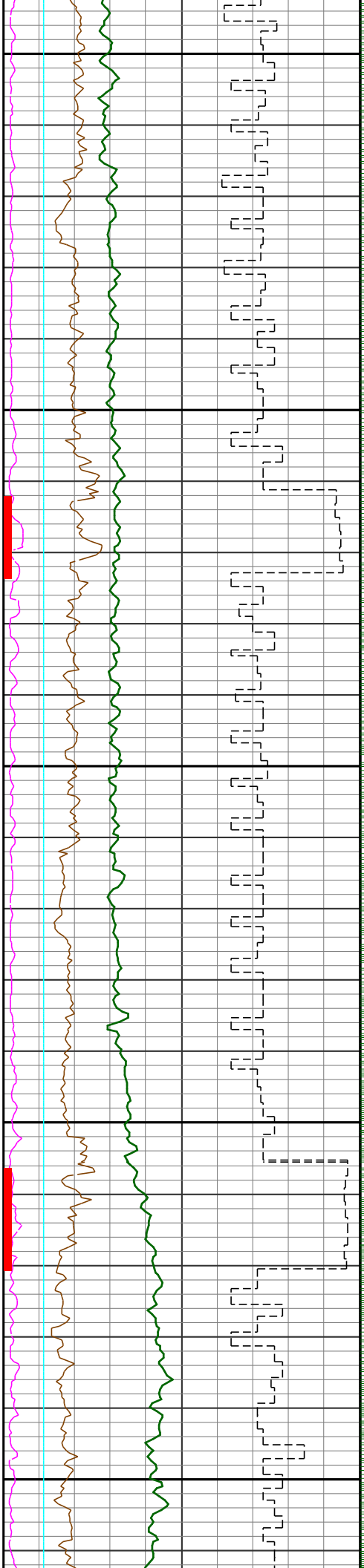
10800



89.6 359.0
125 7113

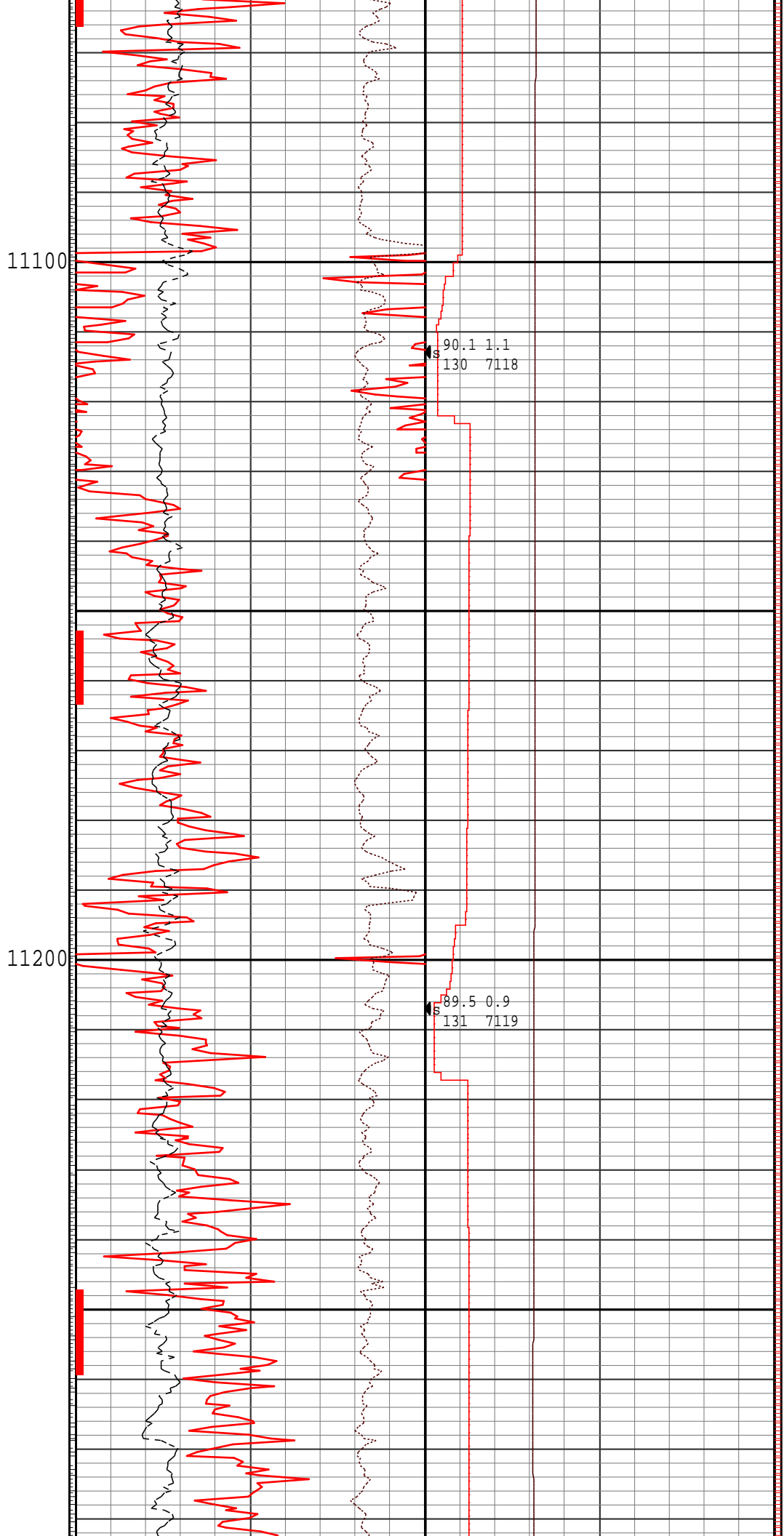
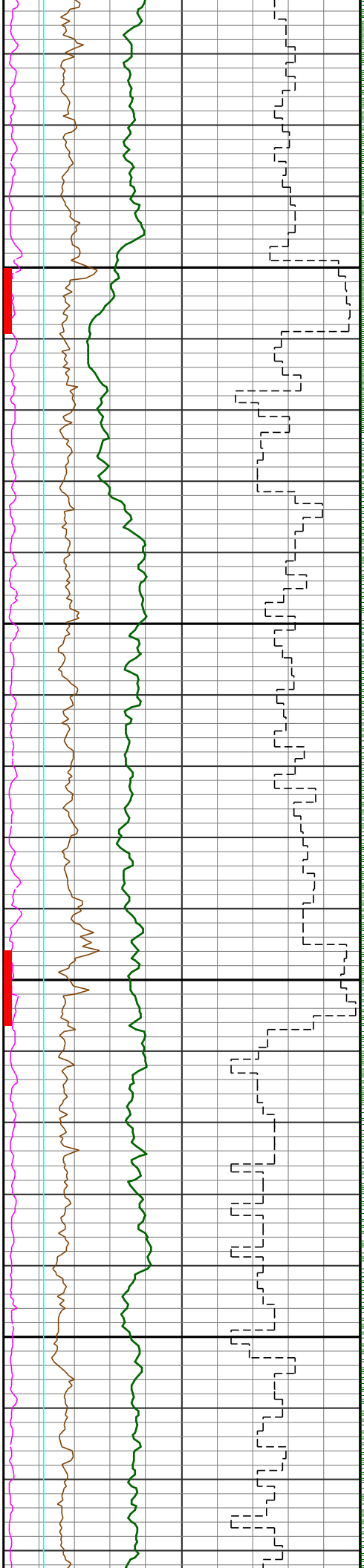
90.0 358.8
126 7114

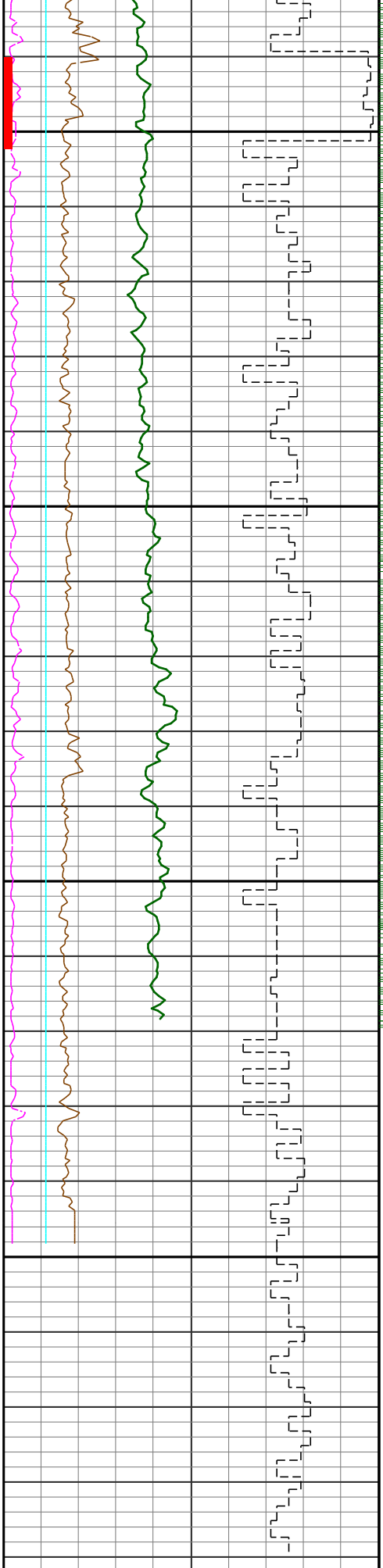
89.3 358.3
127 7114



89.0 358.7
128 7115

88.6 360.0
129 7117



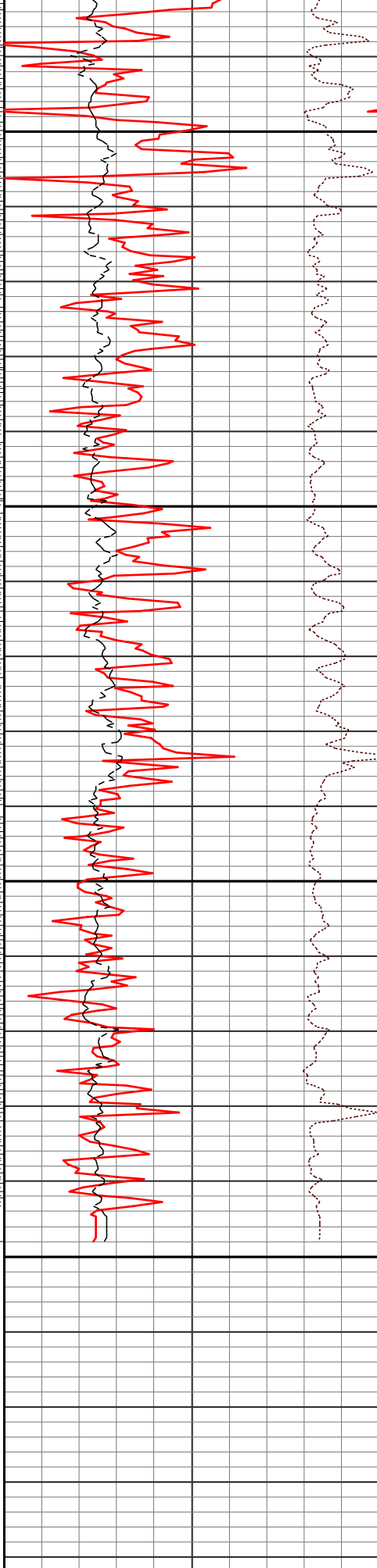


11300

11400

11500

R
U
N
#1



90.3 1.3
132 7119

90.3 1.3
133 7118

91.3 1.3
134 7117

PROJECTED SURVEY

0	GRC API	300	DEPTH	20	DPHI pu	0	7150	TVD ft	7050
	avg = 6 in		MD ft						
1000	ROP ft/hr	0	5" = 100ft	-0.8	DRHO g/cc	0.2	0	GRFET Hr	10
	avg = 2 ft		SHOES	0	PE	10		avg = 1 ft	
5	CALI in	15			SLIDE (DEN)			COMMENTS	
5	BS in	15						inc azi	
0	WSOD in	10						# TVD	
	SLIDE (BIT)								

Survey Report

Vertical Section Plane: 12.18°	Total Correction: 8.42° East to True
Calculation Method: Minimum Curvature	Survey Reference: Wellhead
North Aligned to: True North	Well: MATRIX L-29HC
22.5 FT ROTARY TABLE GROUND LEVEL	FIELD: GREELEY

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Sub Sea TVD (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	0.00 N	0.00 E	0.00	0.00		
THE FOLLOWING ARE ENSIGN MWD SURVEYS.											
128.00	0.30	258.90	128.00	128.00	-0.13	0.06 S	0.33 W	0.34	258.90	0.23	
220.00	0.30	189.90	220.00	220.00	-0.47	0.35 S	0.61 W	0.70	240.15	0.37	
312.00	0.40	211.10	312.00	312.00	-1.01	0.86 S	0.81 W	1.18	223.41	0.18	
404.00	0.60	207.20	403.99	403.99	-1.78	1.56 S	1.20 W	1.97	217.50	0.22	
496.00	0.80	32.80	495.99	495.99	-1.65	1.45 S	1.07 W	1.81	216.44	1.52	
588.00	1.20	18.00	587.98	587.98	-0.09	0.00 N	0.43 W	0.43	270.50	0.51	
680.00	0.40	3.30	679.97	679.97	1.19	1.24 N	0.11 W	1.25	354.92	0.89	
705.00	0.50	4.30	704.97	704.97	1.38	1.44 N	0.10 W	1.44	356.13	0.40	
828.00	0.60	22.90	827.96	827.96	2.55	2.56 N	0.19 E	2.57	4.32	0.17	
923.00	0.60	29.40	922.96	922.96	3.51	3.46 N	0.63 E	3.51	10.35	0.07	
1018.00	0.60	20.30	1017.95	1017.95	4.48	4.36 N	1.05 E	4.48	13.53	0.10	
1113.00	0.70	14.50	1112.94	1112.94	5.55	5.38 N	1.37 E	5.56	14.23	0.13	
1205.00	0.60	18.00	1204.94	1204.94	6.59	6.39 N	1.66 E	6.60	14.53	0.12	
1297.00	1.30	234.20	1296.93	1296.93	6.30	6.23 N	0.96 E	6.31	8.74	1.98	
1390.00	1.40	231.80	1389.91	1389.91	4.64	4.91 N	0.79 W	4.98	350.86	0.12	
1481.00	1.20	230.50	1480.88	1480.88	3.03	3.62 N	2.40 W	4.34	326.47	0.22	
1574.00	0.20	303.70	1573.88	1573.88	2.33	3.09 N	3.29 W	4.51	313.26	1.25	
1666.00	0.40	296.60	1665.87	1665.87	2.47	3.32 N	3.71 W	4.98	311.89	0.22	
1758.00	1.40	134.20	1757.87	1757.87	1.95	2.68 N	3.19 W	4.17	310.10	1.94	
1850.00	3.30	128.00	1849.78	1849.78	0.20	0.27 N	0.30 W	0.40	312.53	2.08	
1942.00	4.60	111.00	1941.57	1941.57	-1.52	2.68 S	5.24 E	5.88	117.12	1.89	
2034.00	6.10	106.80	2033.16	2033.16	-2.48	5.42 S	13.36 E	14.42	112.07	1.68	
2126.00	6.90	123.70	2124.58	2124.58	-4.90	9.90 S	22.64 E	24.71	113.61	2.24	
2218.00	8.30	119.10	2215.77	2215.77	-8.86	16.19 S	33.04 E	36.79	116.11	1.66	
2310.00	9.30	117.50	2306.69	2306.69	-12.75	22.85 S	45.43 E	50.86	116.70	1.12	
2403.00	10.50	120.00	2398.30	2398.30	-17.33	30.56 S	59.44 E	66.84	117.21	1.37	
2495.00	12.40	117.90	2488.47	2488.47	-22.58	39.38 S	75.43 E	85.09	117.57	2.11	
2590.00	12.10	120.80	2581.30	2581.30	-28.52	49.25 S	93.00 E	105.23	117.90	0.72	
2685.00	13.20	126.50	2674.00	2674.00	-36.16	60.80 S	110.27 E	125.92	118.87	1.75	
2781.00	14.30	127.00	2767.25	2767.25	-45.66	74.45 S	128.55 E	148.56	120.08	1.15	
2876.00	14.00	125.80	2859.37	2859.37	-55.18	88.24 S	147.24 E	171.66	120.93	0.44	
2971.00	12.20	121.70	2951.89	2951.89	-63.14	100.23 S	165.10 E	193.15	121.26	2.13	
3066.00	13.40	124.50	3044.53	3044.53	-70.68	111.74 S	182.72 E	214.18	121.45	1.42	
3161.00	10.90	119.30	3137.40	3137.40	-77.50	122.38 S	199.62 E	234.15	121.51	2.87	
3257.00	10.30	121.50	3231.76	3231.76	-83.02	131.30 S	214.86 E	251.80	121.43	0.75	
3352.00	9.90	126.10	3325.29	3325.29	-89.14	140.55 S	228.70 E	268.44	121.57	0.95	
3447.00	10.60	124.90	3418.77	3418.77	-95.82	150.36 S	242.46 E	285.30	121.81	0.77	
3542.00	11.70	128.00	3511.98	3511.98	-103.39	161.29 S	257.22 E	303.61	122.09	1.32	
3637.00	12.40	122.40	3604.89	3604.89	-111.12	172.69 S	273.42 E	323.39	122.28	1.43	
3733.00	13.80	124.90	3698.39	3698.39	-119.10	184.76 S	291.52 E	345.14	122.37	1.57	
3828.00	15.00	125.60	3790.40	3790.40	-128.36	198.40 S	310.81 E	368.74	122.55	1.28	
3923.00	16.40	126.50	3881.85	3881.85	-138.77	213.54 S	331.59 E	394.40	122.78	1.50	
4018.00	16.30	123.80	3973.01	3973.01	-149.21	228.93 S	353.45 E	421.11	122.93	0.81	
4113.00	15.10	121.40	4064.47	4064.47	-158.19	242.80 S	375.09 E	446.81	122.92	1.44	
4209.00	13.10	117.90	4157.57	4157.57	-165.26	254.40 S	395.38 E	470.15	122.76	2.26	
4304.00	11.80	117.30	4250.34	4250.34	-170.71	263.90 S	413.52 E	490.55	122.54	1.37	
4399.00	9.80	115.90	4343.65	4343.65	-175.16	271.88 S	429.43 E	508.26	122.34	2.12	
4494.00	9.70	123.80	4437.28	4437.28	-180.03	279.87 S	443.35 E	524.30	122.26	1.41	
4589.00	10.60	127.90	4530.80	4530.80	-186.77	289.69 S	456.90 E	541.00	122.38	1.21	
4684.00	11.60	127.20	4624.02	4624.02	-194.60	300.83 S	471.40 E	559.21	122.54	1.06	
4780.00	10.30	128.00	4718.27	4718.27	-202.42	311.95 S	485.85 E	577.38	122.70	1.36	
4875.00	11.60	130.50	4811.54	4811.54	-210.65	323.38 S	499.81 E	595.30	122.90	1.46	
4970.00	12.10	129.80	4904.51	4904.51	-219.80	335.96 S	514.72 E	614.66	123.13	0.55	

5065.00	11.30	129.60	4997.54	4997.54	-228.70	348.27 S	529.54 E	633.80	123.33	0.84
5161.00	11.50	126.30	5091.64	5091.64	-236.94	359.93 S	544.50 E	652.71	123.47	0.71
5256.00	10.40	121.00	5184.92	5184.92	-243.58	369.95 S	559.49 E	670.74	123.47	1.57
5351.00	9.80	116.10	5278.44	5278.44	-248.29	377.92 S	574.10 E	687.32	123.36	1.10
5446.00	9.40	120.70	5372.12	5372.12	-252.70	385.44 S	588.03 E	703.10	123.24	0.91
5541.00	9.30	128.00	5465.86	5465.86	-258.51	394.13 S	600.75 E	718.50	123.27	1.25
5636.00	11.10	129.10	5559.35	5559.35	-265.99	404.62 S	613.90 E	735.25	123.39	1.91
5731.00	11.80	126.50	5652.46	5652.46	-274.13	416.17 S	628.80 E	754.05	123.50	0.92
5826.00	13.20	124.20	5745.21	5745.21	-282.20	428.04 S	645.58 E	774.59	123.55	1.56
5922.00	11.20	121.40	5839.04	5839.04	-289.38	439.06 S	662.61 E	794.87	123.53	2.17
6017.00	11.70	123.50	5932.15	5932.15	-295.92	449.19 S	678.51 E	813.73	123.51	0.68
6112.00	12.30	127.30	6025.07	6025.07	-303.72	460.64 S	694.60 E	833.46	123.55	1.04
6207.00	13.20	127.50	6117.73	6117.73	-312.65	473.37 S	711.25 E	854.38	123.65	0.95
6303.00	9.60	123.10	6211.82	6211.82	-320.20	484.42 S	726.66 E	873.32	123.69	3.86
6398.00	9.80	120.00	6305.46	6305.46	-325.50	492.79 S	740.30 E	889.31	123.65	0.59

Survey Report

Vertical Section Plane: 12.18° Total Correction: 8.42° East to True

Calculation Method: Minimum Curvature Survey Reference: Wellhead

North Aligned to: True North Well: MATRIX L-29HC

22.5 FT ROTARY TABLE GROUND LEVEL FIELD: GREELEY

Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Sub Sea TVD (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)
6446.00	8.60	113.10	6352.84	6352.84	-327.43	496.24 S	747.14 E	896.92	123.59	3.39	
6493.00	10.00	100.60	6399.23	6399.23	-327.99	498.37 S	754.38 E	904.13	123.45	5.21	
6541.00	10.90	86.20	6446.44	6446.44	-326.62	498.83 S	763.01 E	911.60	123.18	5.74	
6588.00	12.80	64.90	6492.46	6492.46	-322.24	496.33 S	772.16 E	917.92	122.73	10.07	
6636.00	14.30	56.00	6539.13	6539.13	-314.74	490.76 S	781.89 E	923.15	122.11	5.34	
6683.00	16.10	49.80	6584.48	6584.48	-305.39	483.30 S	791.68 E	927.55	121.40	5.16	
6731.00	19.30	49.60	6630.21	6630.21	-293.82	473.86 S	802.81 E	932.23	120.55	6.67	
6778.00	21.80	40.00	6674.22	6674.22	-279.92	462.14 S	814.34 E	936.33	119.58	8.91	
6826.00	24.70	31.20	6718.33	6718.33	-262.55	446.73 S	825.27 E	938.42	118.43	9.41	
6873.00	27.70	23.50	6760.51	6760.51	-242.55	428.30 S	834.72 E	938.19	117.16	9.63	
6921.00	31.20	18.90	6802.31	6802.31	-219.25	406.30 S	843.20 E	935.98	115.73	8.68	
6969.00	35.40	15.70	6842.42	6842.42	-193.01	381.14 S	850.99 E	932.44	114.13	9.48	
7017.00	39.80	11.50	6880.45	6880.45	-163.75	352.68 S	857.82 E	927.49	112.35	10.60	
7064.00	44.50	8.70	6915.29	6915.29	-132.25	321.64 S	863.31 E	921.28	110.43	10.77	
7112.00	50.10	8.00	6947.83	6947.83	-97.07	286.75 S	868.42 E	914.54	108.27	11.72	
7159.00	53.90	7.60	6976.76	6976.76	-60.15	250.06 S	873.45 E	908.54	105.98	8.11	
7207.00	55.80	5.70	7004.39	7004.39	-21.09	211.08 S	877.98 E	903.00	103.52	5.11	
7254.00	60.10	5.40	7029.33	7029.33	18.47	171.44 S	881.83 E	898.34	101.00	9.16	
7296.00	65.20	4.50	7048.62	7048.62	55.47	134.29 S	885.04 E	895.17	98.63	12.29	
7349.00	71.90	3.80	7067.99	7067.99	104.28	85.12 S	888.61 E	892.67	95.47	12.70	
7397.00	77.90	2.70	7080.49	7080.49	150.04	38.87 S	891.23 E	892.07	92.50	12.69	
7445.00	80.20	2.20	7089.61	7089.61	196.49	8.21 N	893.24 E	893.28	89.47	4.90	
TIED IN TO ENSIGN MWD SURVEYS AT 7508' MD.											
7508.00	86.60	1.50	7096.84	7096.84	258.02	70.73 N	895.26 E	898.04	85.48	10.22	
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.											
7566.00	87.85	1.21	7099.65	7099.65	314.92	128.64 N	896.63 E	905.81	81.84	2.21	173.31
7628.00	88.20	1.30	7101.79	7101.79	375.76	190.59 N	897.98 E	917.99	78.02	0.58	173.31
7723.00	89.25	0.16	7103.90	7103.90	468.84	285.56 N	899.19 E	943.45	72.38	1.63	166.08
7817.00	89.52	0.16	7104.91	7104.91	560.78	379.55 N	899.45 E	976.26	67.12	0.29	169.69
7910.00	89.08	359.28	7106.05	7106.05	651.58	472.54 N	899.00 E	1015.63	62.27	1.06	173.31
8005.00	90.04	359.19	7106.78	7106.78	744.16	567.53 N	897.73 E	1062.08	57.70	1.01	173.31
8099.00	88.72	359.54	7107.79	7107.79	835.81	661.52 N	896.69 E	1114.30	53.58	1.45	176.92
8193.00	90.40	0.16	7108.52	7108.52	927.64	755.51 N	896.44 E	1172.35	49.88	1.91	180.54
8287.00	89.69	359.89	7108.44	7108.44	1019.53	849.51 N	896.49 E	1235.05	46.54	0.81	180.54
8381.00	89.52	359.81	7109.09	7109.09	1111.36	943.51 N	896.24 E	1301.33	43.53	0.20	184.15
8475.00	89.52	359.54	7109.88	7109.88	1203.13	1037.50 N	895.71 E	1370.66	40.81	0.29	184.15
8569.00	88.90	358.58	7111.17	7111.17	1294.66	1131.48 N	894.16 E	1442.14	38.32	1.22	184.15
8664.00	89.96	359.28	7112.12	7112.12	1387.13	1226.45 N	892.39 E	1516.76	36.04	1.34	187.76
8758.00	90.13	358.93	7112.04	7112.04	1478.69	1320.44 N	890.92 E	1592.89	34.01	0.41	187.76
8852.00	90.48	358.84	7111.54	7111.54	1570.17	1414.42 N	889.09 E	1670.65	32.15	0.38	187.76
8946.00	90.22	359.89	7110.97	7110.97	1661.82	1508.41 N	888.05 E	1750.41	30.49	1.75	191.38
9041.00	89.78	358.75	7110.97	7110.97	1754.44	1603.41 N	886.92 E	1832.36	28.95	1.29	191.38
9135.00	90.48	359.19	7110.76	7110.76	1845.95	1697.39 N	885.23 E	1914.36	27.54	0.88	194.99
9229.00	90.75	358.49	7109.75	7109.75	1937.41	1791.36 N	883.33 E	1997.31	26.25	0.80	198.61
9323.00	92.07	358.93	7107.43	7107.43	2028.79	1885.31 N	881.22 E	2081.09	25.05	1.48	194.99
9417.00	89.87	358.05	7105.84	7105.84	2120.10	1979.26 N	878.74 E	2165.56	23.94	2.52	194.99
9510.00	90.04	356.91	7105.92	7105.92	2210.06	2072.17 N	874.65 E	2249.20	22.88	1.24	198.61
9605.00	89.16	358.66	7106.58	7106.58	2302.07	2167.09 N	870.98 E	2335.57	21.90	2.06	198.61
9699.00	89.34	359.37	7107.81	7107.81	2393.59	2261.06 N	869.36 E	2422.44	21.03	0.78	198.61
9793.00	89.34	1.39	7108.89	7108.89	2485.59	2355.05 N	869.99 E	2510.61	20.27	2.15	198.61
9887.00	90.22	2.71	7109.25	7109.25	2578.12	2448.99 N	873.35 E	2600.05	19.63	1.69	202.22
9981.00	90.84	3.15	7108.38	7108.38	2670.90	2542.86 N	878.15 E	2690.22	19.05	0.81	202.22
10075.00	90.75	1.74	7107.08	7107.08	2763.53	2636.76 N	882.16 E	2780.42	18.50	1.50	205.83
10170.00	89.25	359.72	7107.08	7107.08	2856.63	2731.75 N	883.37 E	2871.03	17.92	2.65	205.83
10264.00	88.72	358.31	7108.75	7108.75	2948.15	2825.72 N	881.76 E	2960.10	17.33	1.60	209.45
10358.00	88.46	359.89	7111.06	7111.06	3039.68	2919.67 N	880.28 E	3049.49	16.78	1.70	209.45
10453.00	89.52	0.16	7112.73	7112.73	3132.53	3014.66 N	880.32 E	3140.56	16.28	1.15	209.45
10547.00	90.13	358.84	7113.02	7113.02	3224.23	3108.65 N	879.50 E	3230.67	15.80	1.55	209.45
10642.00	89.60	359.02	7113.24	7113.24	3316.71	3203.63 N	877.73 E	3321.70	15.32	0.59	209.45

10736.00	90.04	358.84	7113.54	7113.54	3408.20	3297.62 N	875.97 E	3411.98	14.88	0.51	213.06
10830.00	89.34	358.31	7114.05	7114.05	3499.56	3391.59 N	873.64 E	3502.30	14.44	0.93	213.06
10924.00	88.99	358.66	7115.42	7115.42	3590.88	3485.54 N	871.15 E	3592.76	14.03	0.53	213.06
11019.00	88.64	359.98	7117.38	7117.38	3683.47	3580.51 N	870.02 E	3684.70	13.66	1.44	213.06
11113.00	90.13	1.12	7118.39	7118.39	3775.54	3674.50 N	870.93 E	3776.30	13.33	2.00	213.06
11207.00	89.52	0.86	7118.68	7118.68	3867.75	3768.48 N	872.55 E	3868.18	13.04	0.71	216.68
11301.00	90.31	1.30	7118.82	7118.82	3959.99	3862.47 N	874.32 E	3960.19	12.75	0.96	213.06
11395.00	90.31	1.30	7118.31	7118.31	4052.30	3956.44 N	876.45 E	4052.36	12.49	0.00	216.68
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 11492'MD.											
11492.00	91.31	1.30	7116.94	7116.94	4147.54	4053.40 N	878.65 E	4147.54	12.23	1.03	

EQUIPMENT DATA						
RUN NUMBER	1					
RES DTA						
RES MANDREL						
RES SIZE in						
RES VERIFIER						
API BLANKET						
HDS-1M DTA						
HDS-1M MANDREL						
HDS-1M SIZE in						
DNSC DTA	4077					
DNSC MANDREL	N47M077D					
DNSC SIZE in	4 3/4					
DENSITY SOURCE NO.	5204GW					
NEUTRON SOURCE NO.						
CLSS DTA						
CLSS MANDREL						
CLSS SIZE in						
DPM DTA						
DPM SIZE in						
DFT DTA						
DFT MANDREL						
DFT SIZE in						
PZIG UXM DTA						
PZIG LXM DTA						
PZIG SIZE in						

BOTTOM HOLE ASSEMBLY RECORD						
RUN 1		ft				
6.125" PDC BIT	0.50					
1.5° MUD MOTOR	28.75					
NM STAB	4.73					
IDNSC (DENSITY)	18.84					
ABS (BATTERY)	15.34					
X/O	1.19					
HDS-1L (DIR/GR)	28.74					
NM STAB	5.38					
NMDC	30.81					
FILTER SUB	3.08					
TOTAL BHA:	137.31					

