

**40 ARM CALIPER**

Company	WHITING PETOLEUM	Company	WHITING PETOLEUM
Well	RAZOR 33M-2804	Well	RAZOR 33M-2804
Field	WILDCAT	Field	WILDCAT
County	WELD	County	WELD
State	COLORADO	State	COLORADO
Location:	SEC 33 TWP 10N RGE 58W	API # :	0512339258000
Permanent Datum	GL 4729'	Elevation	Other Services CBL 3.75" GUAGE
Log Measured From	KB (18.5')		
Drilling Measured From	KELLY BUSHING	Elevation	K.B. 4747.5' D.F. 4746' G.L. 4729'

Date	25 JAN 2015
Run Number	TWO
Depth Driller	5011.9
Depth Logger	5050'
Bottom Logged Interval	5148'
Top Log Interval	0
Open Hole Size	N/A
Type Fluid	WATER
Density / Viscosity	N/A
Max. Recorded Temp.	N/A
E. Estimated Cement Top	N/A
Time Well Ready	16:15
Time Logger on Bottom	16:45
E. equipment Number	13033
Location	BRIGHTON
Recorded By	J. OSTLER
Witnessed By	

Run Number	Borehole Record		Tubing Record				
	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	9.625"	36#	0'	1567.6'
P rot. String	7"	29#	0'	6170.5'
P production String	4.5"	11.6#		13168'
Liner				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

**Comments**

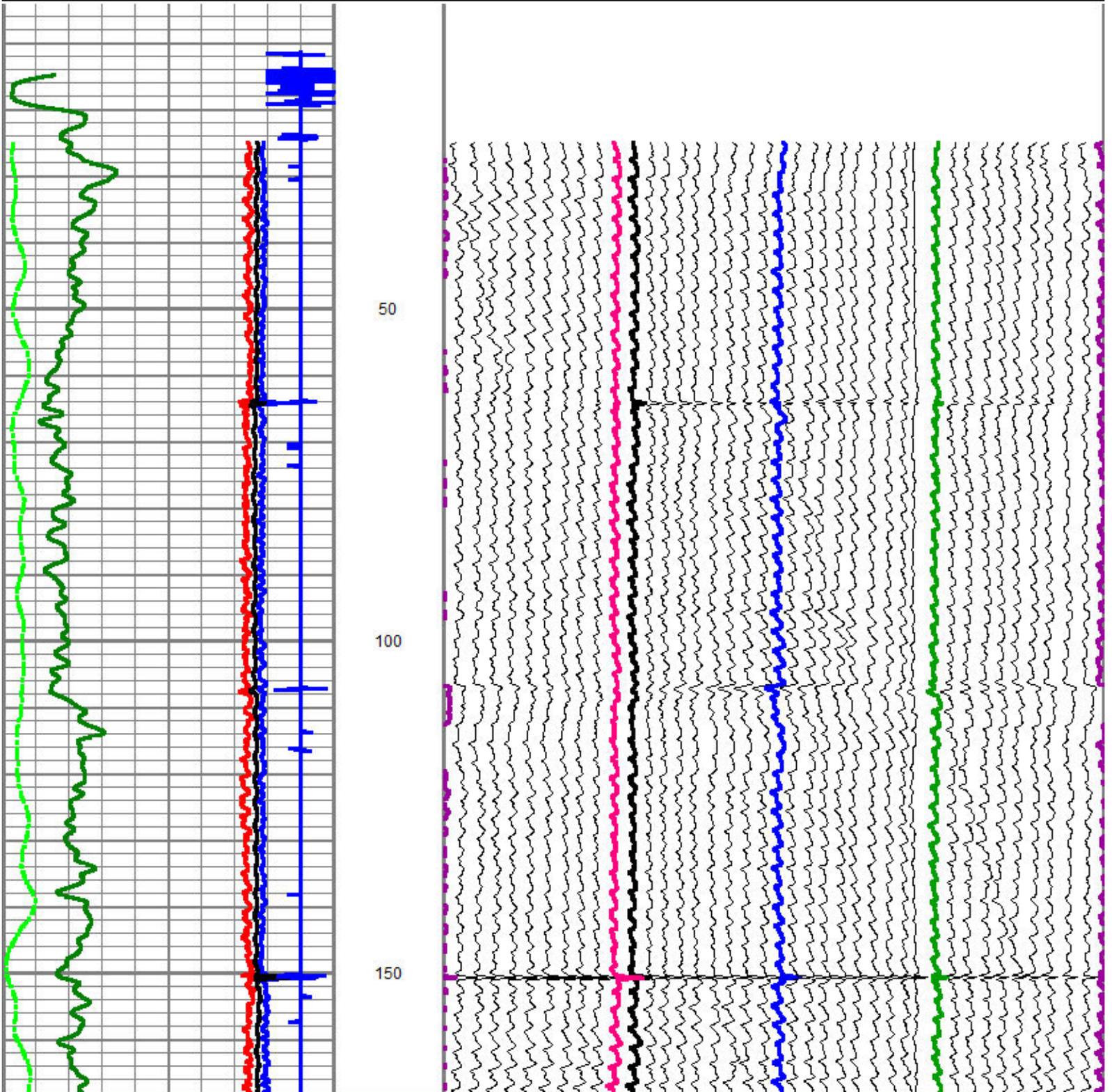
WELL WAS LOGGED WITH 1500 PSI AT THE WELL HEAD  
CREW: GILBERTO CAVAZOS, MIKE BINGAHAM, TIM FISHEL

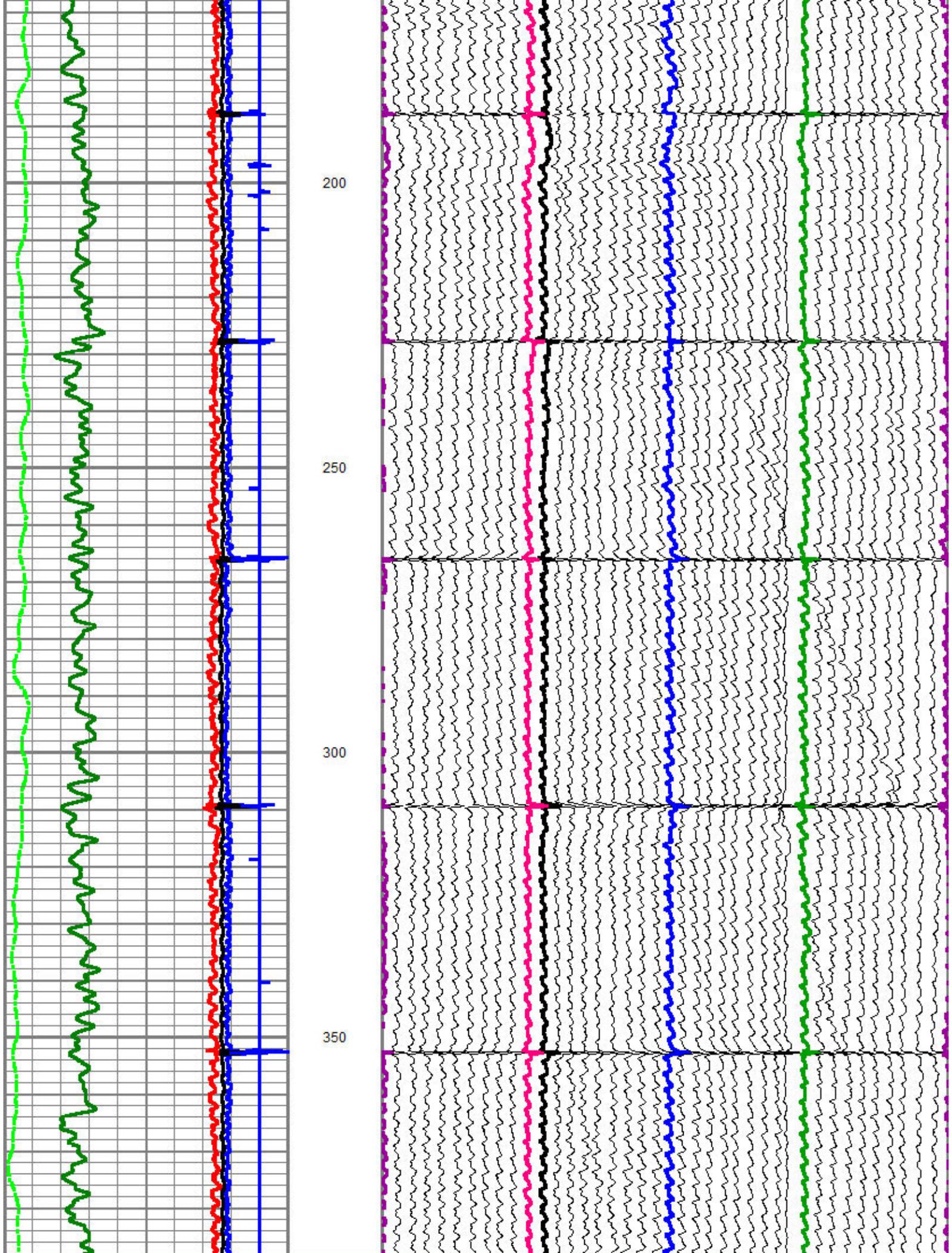
# WIRELINE SERVICES

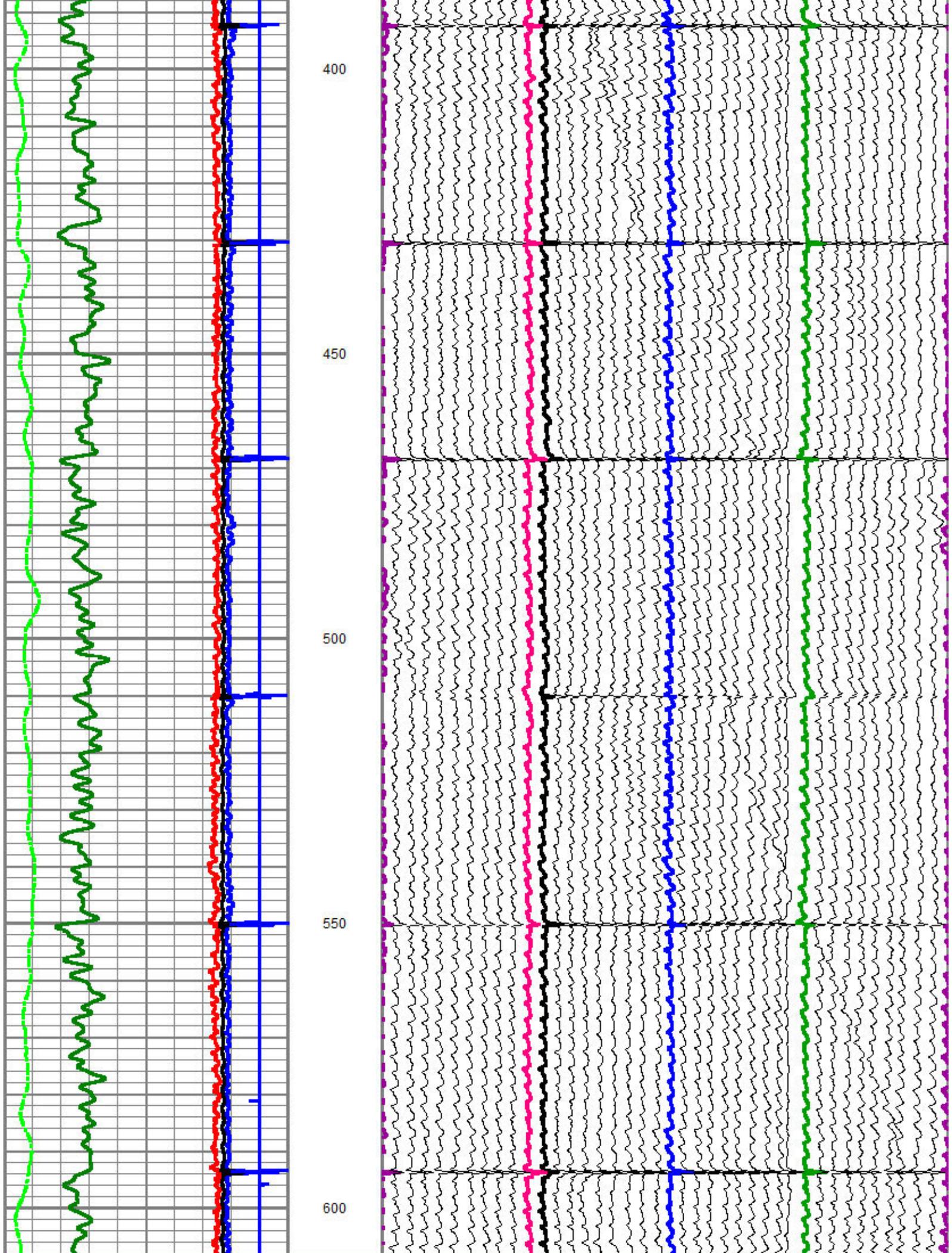
Database File: 2804.db  
 Dataset Pathname: pass9  
 Presentation Format: ptsmfc40  
 Dataset Creation: Sun Jan 25 17:14:57 2015 by Log 0  
 Charted by: Depth in Feet scaled 1:240

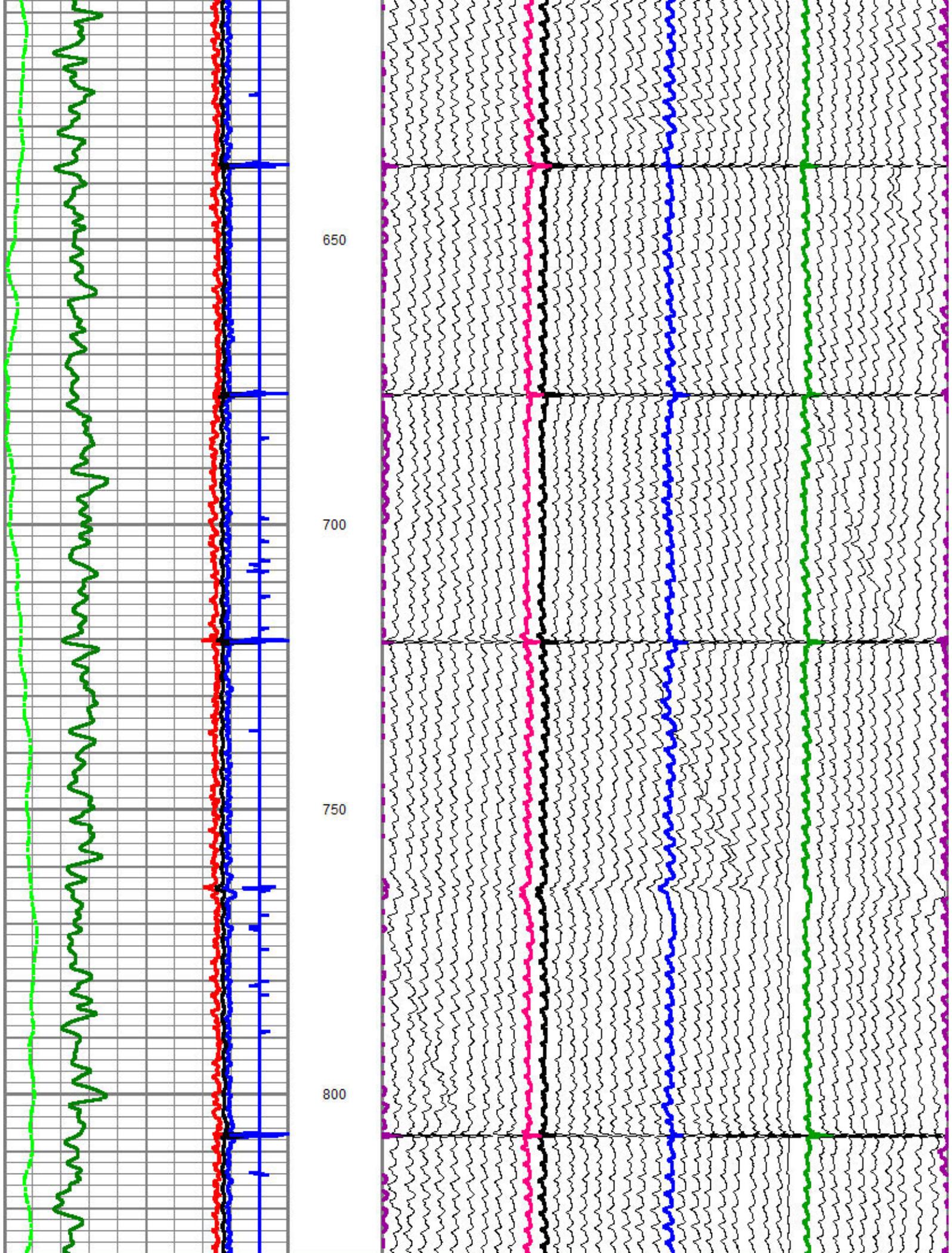
4.5	IDMX (in)	5.5
4.5	IDMN (in)	5.5
4.5	IDAV (in)	5.5
0	GR (GAPI)	150
9	CCL	-1
0	DEVI (°)	20

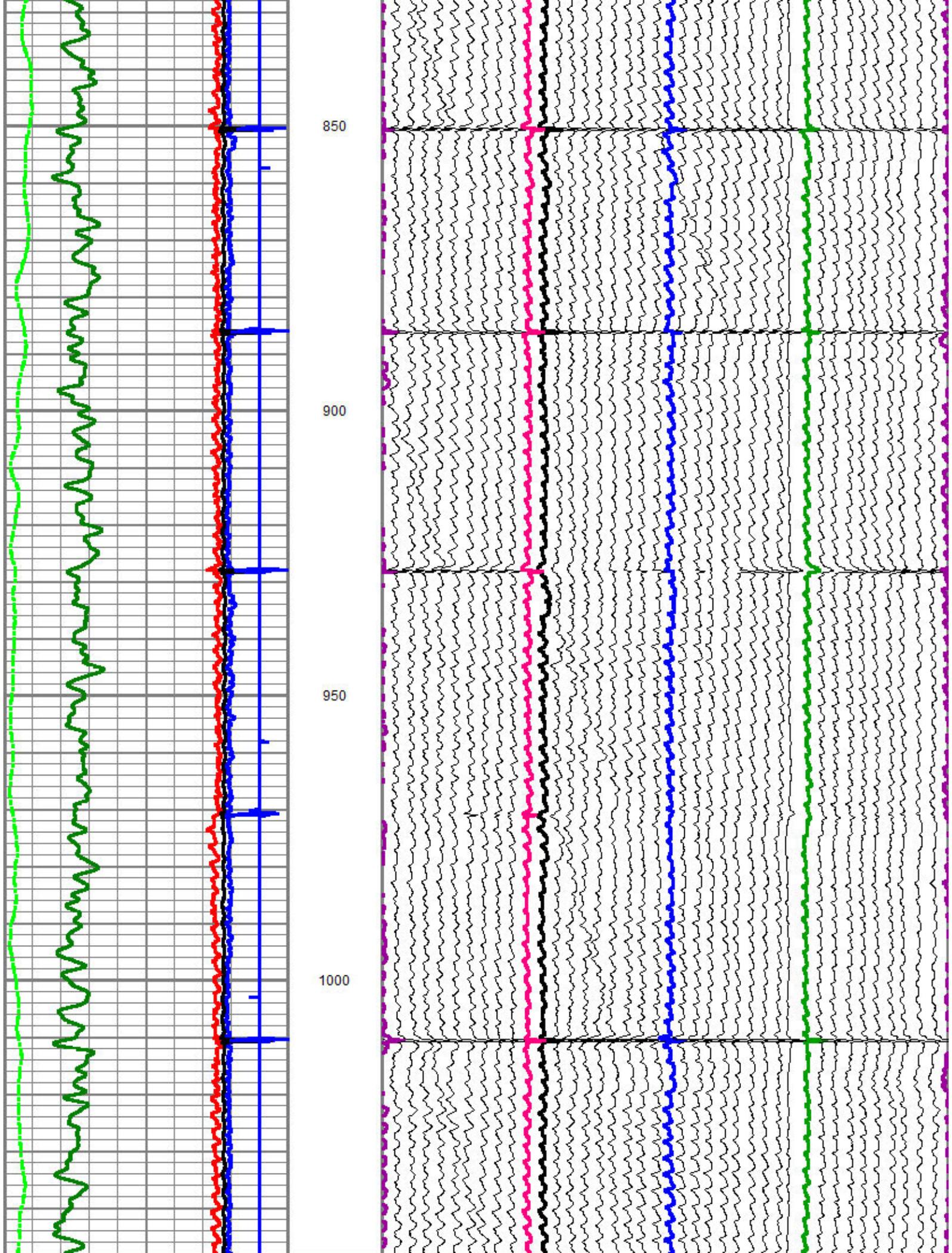
2.4375	R01 (in)	4.9375
1.875	R10 (in)	4.375
1.25	R20 (in)	3.75
0.625	R30 (in)	3.125
0	R40 (in)	2.5

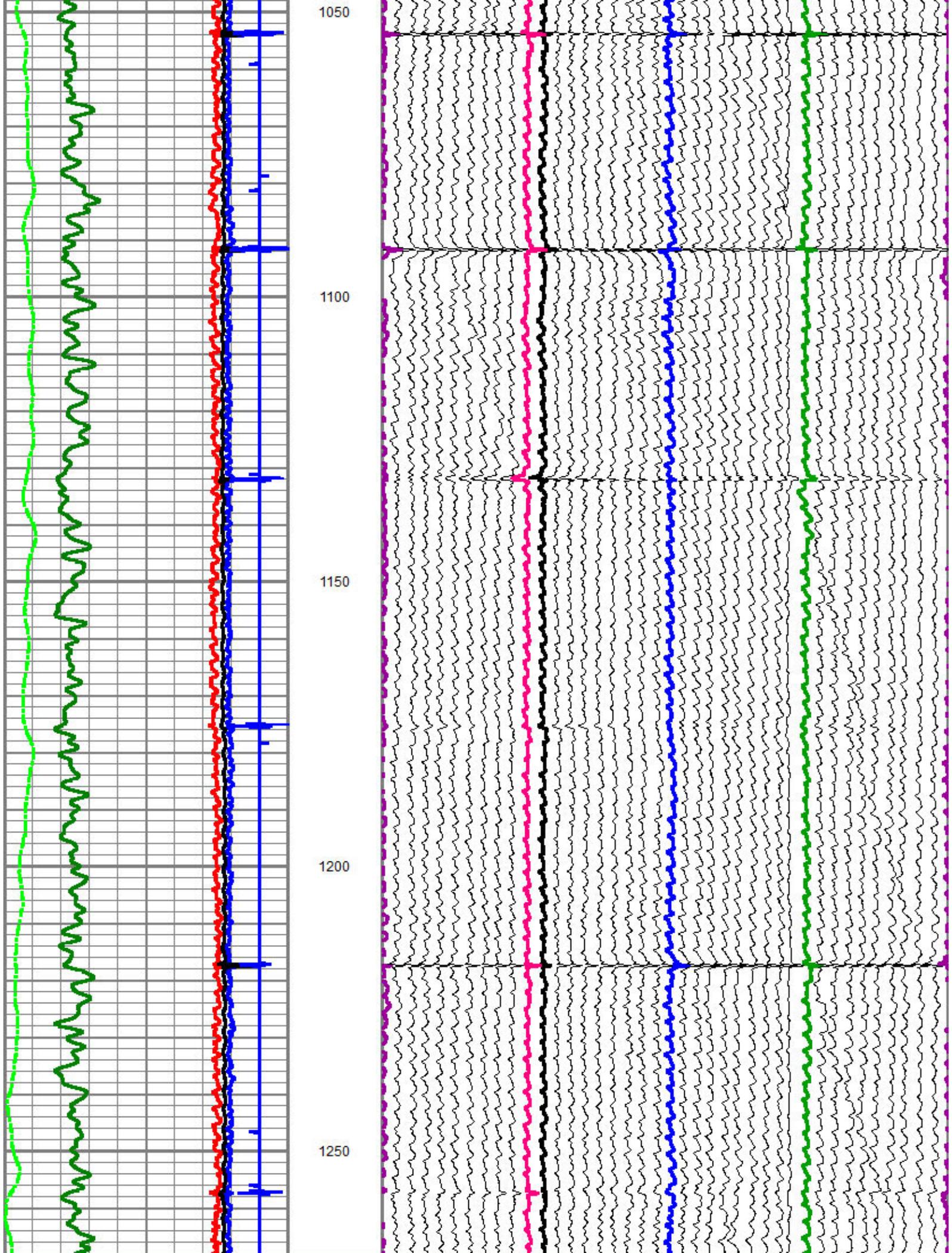


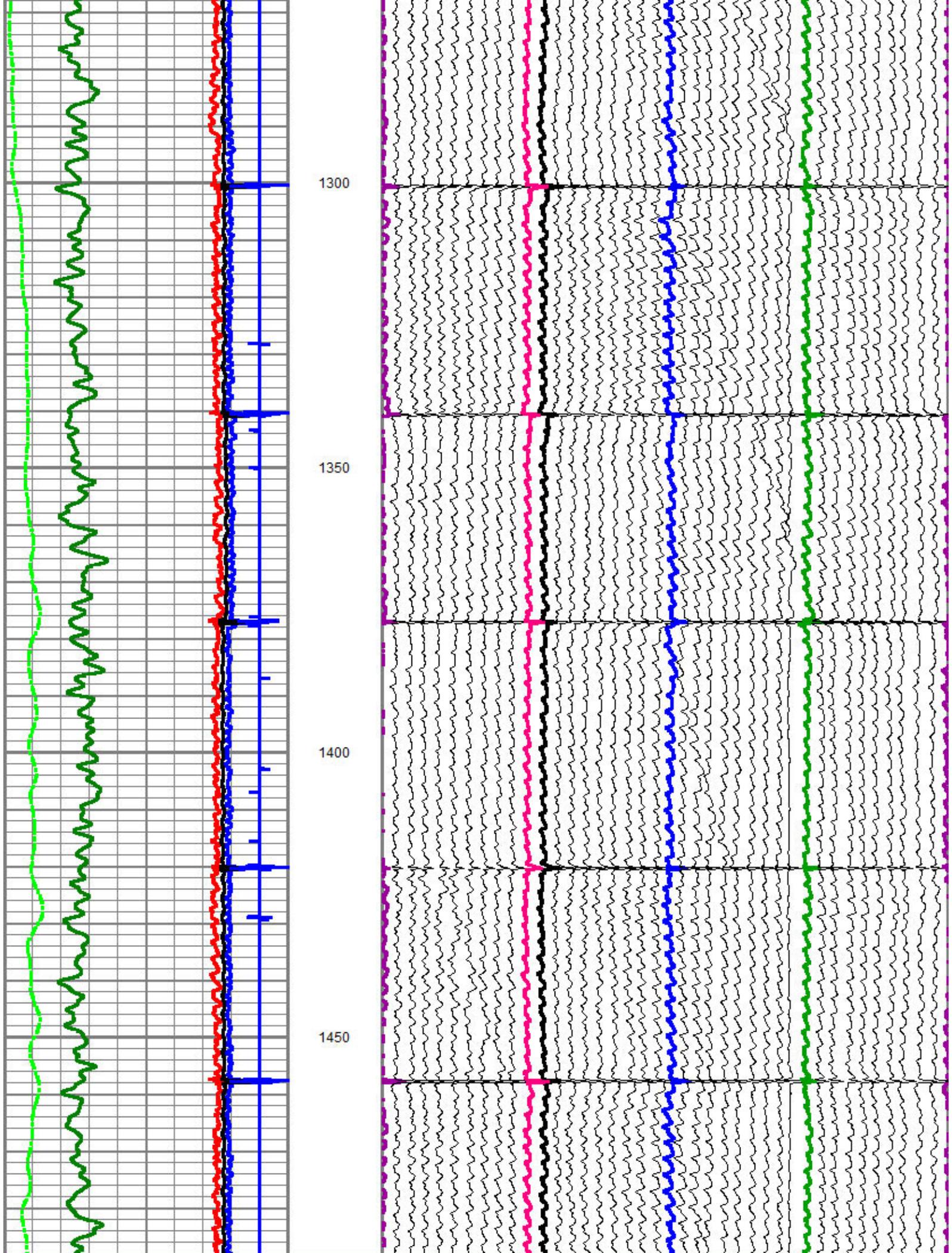


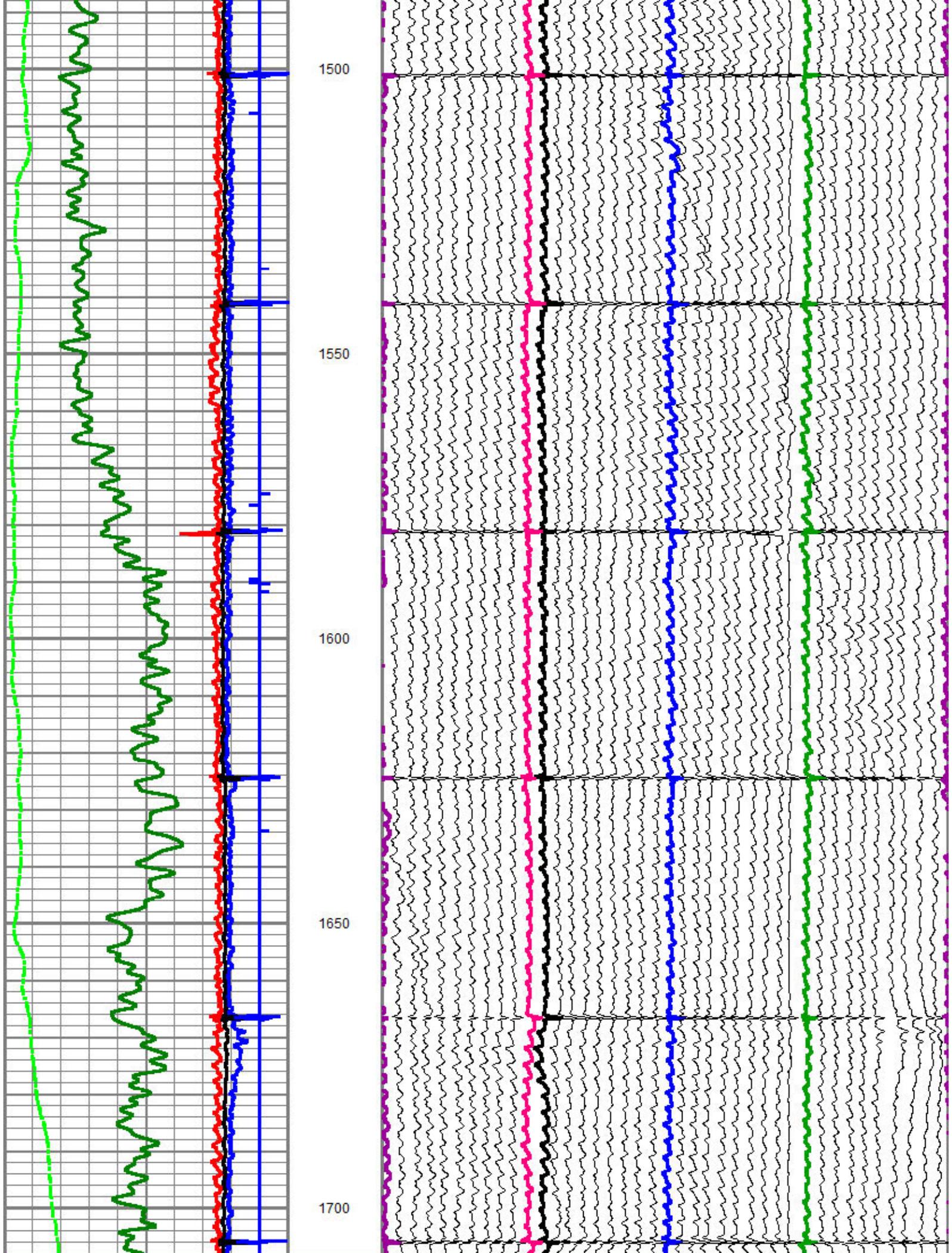


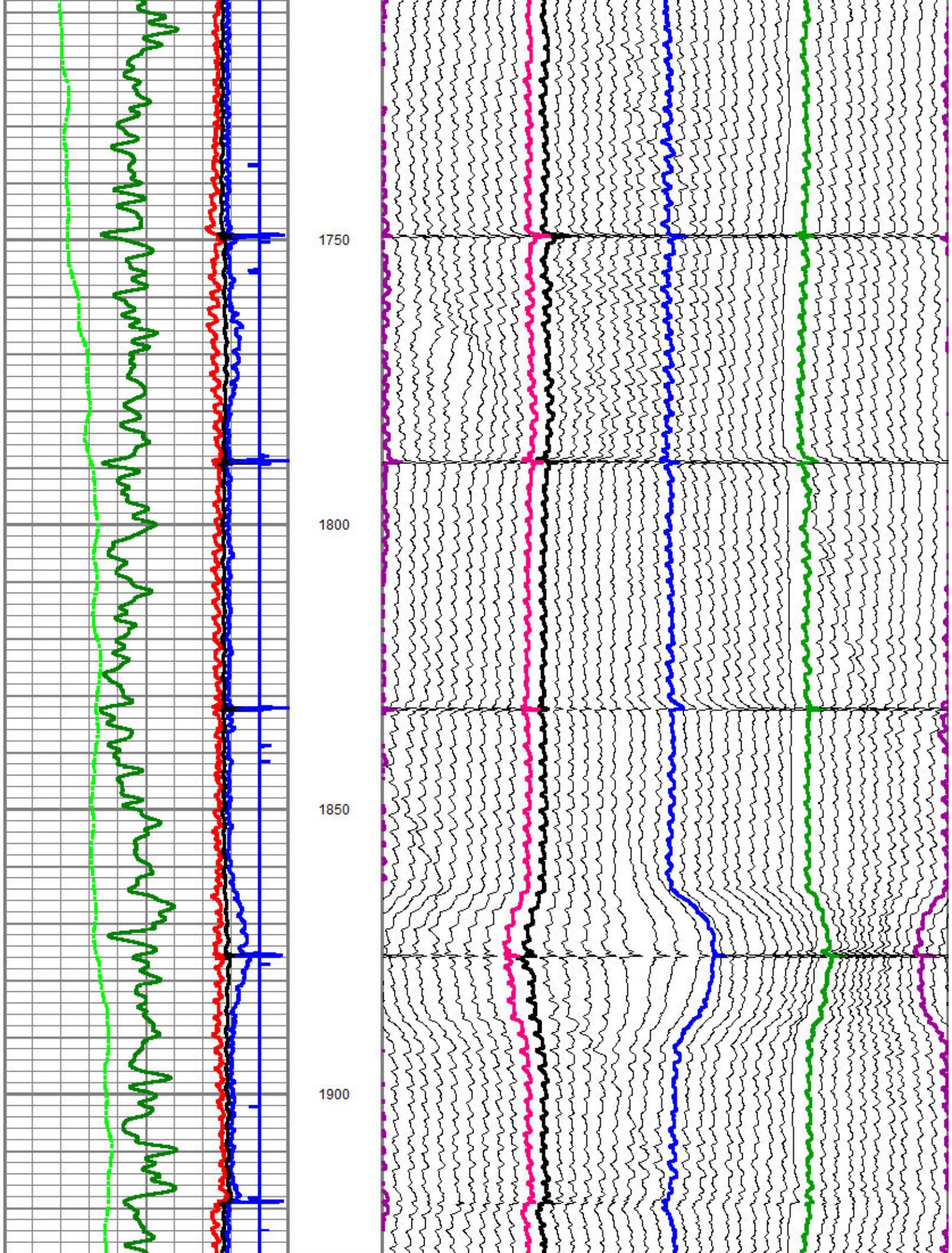


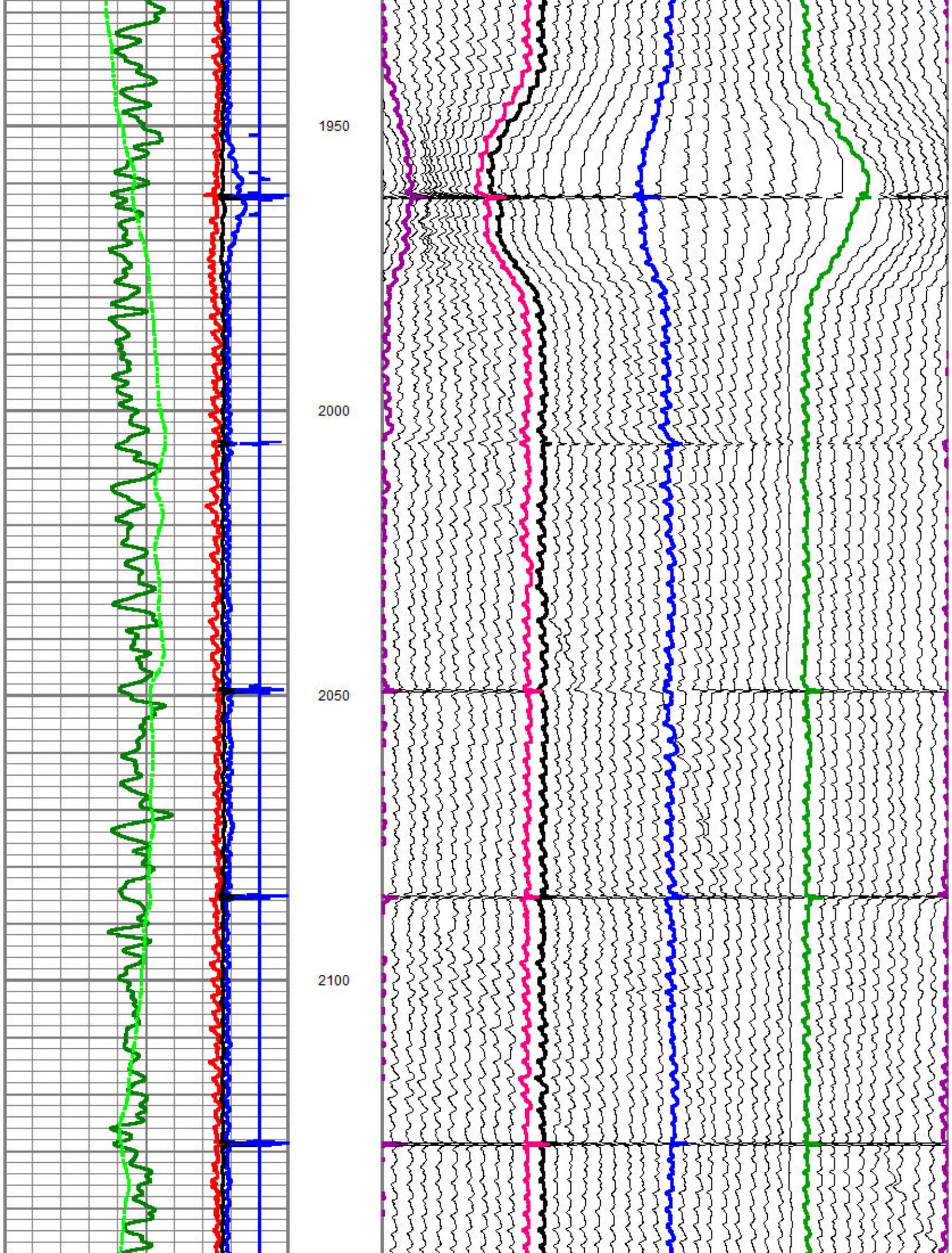


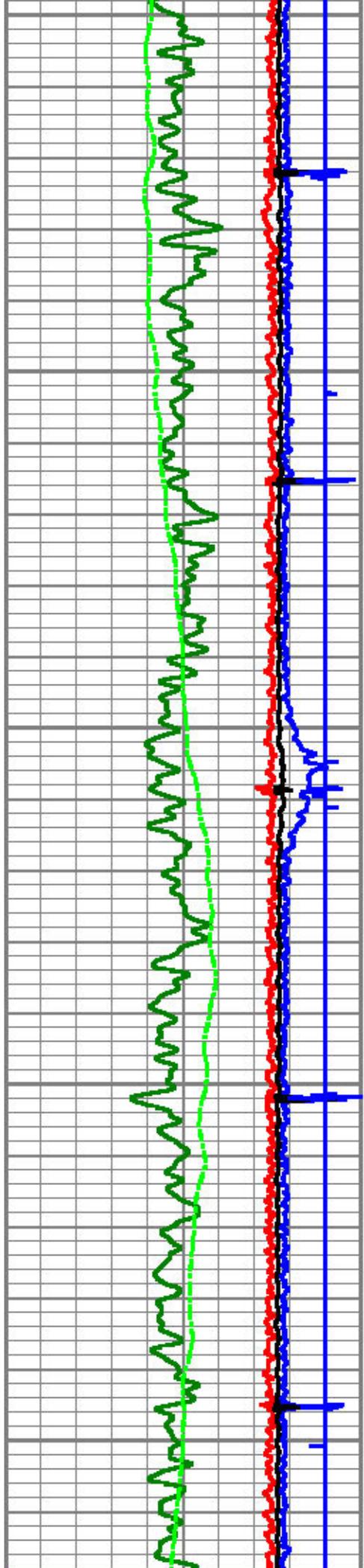




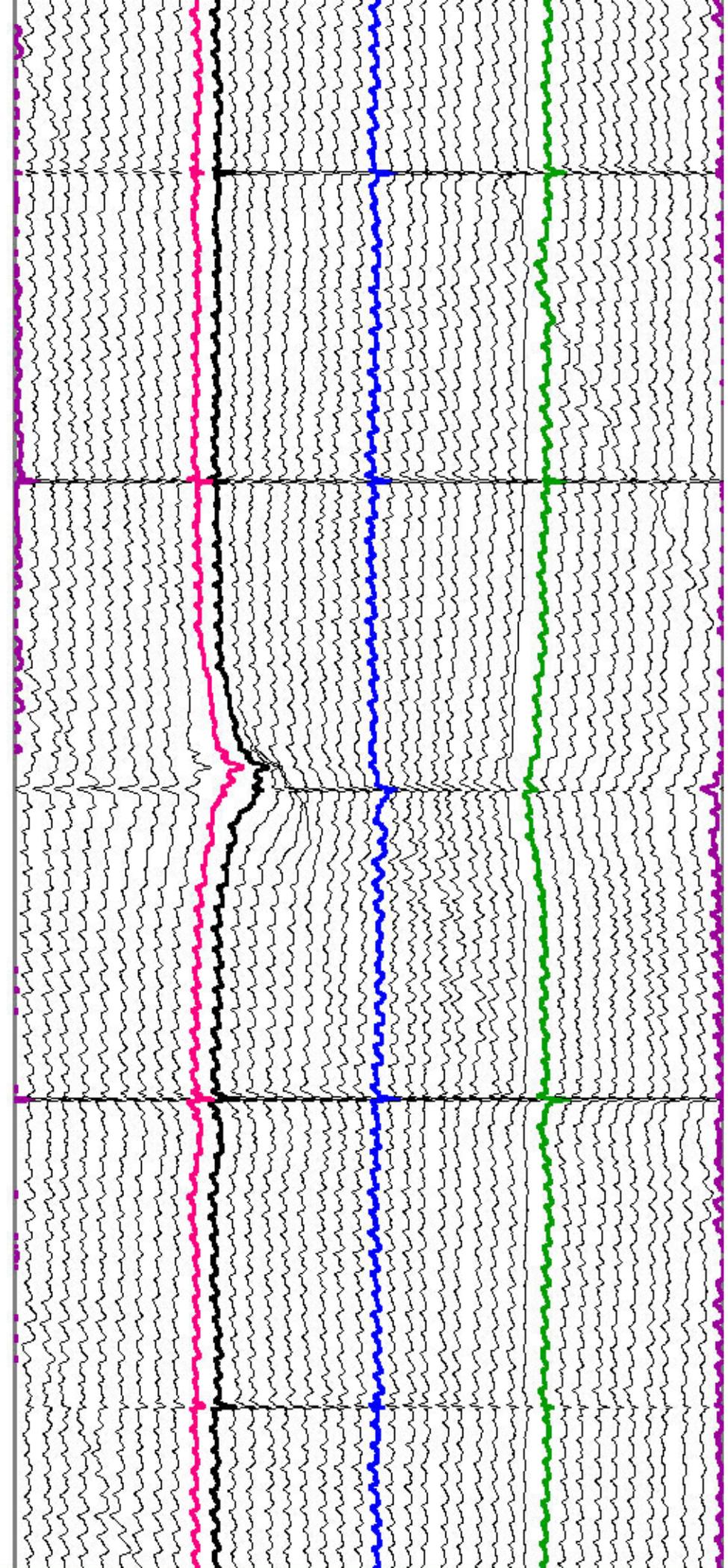


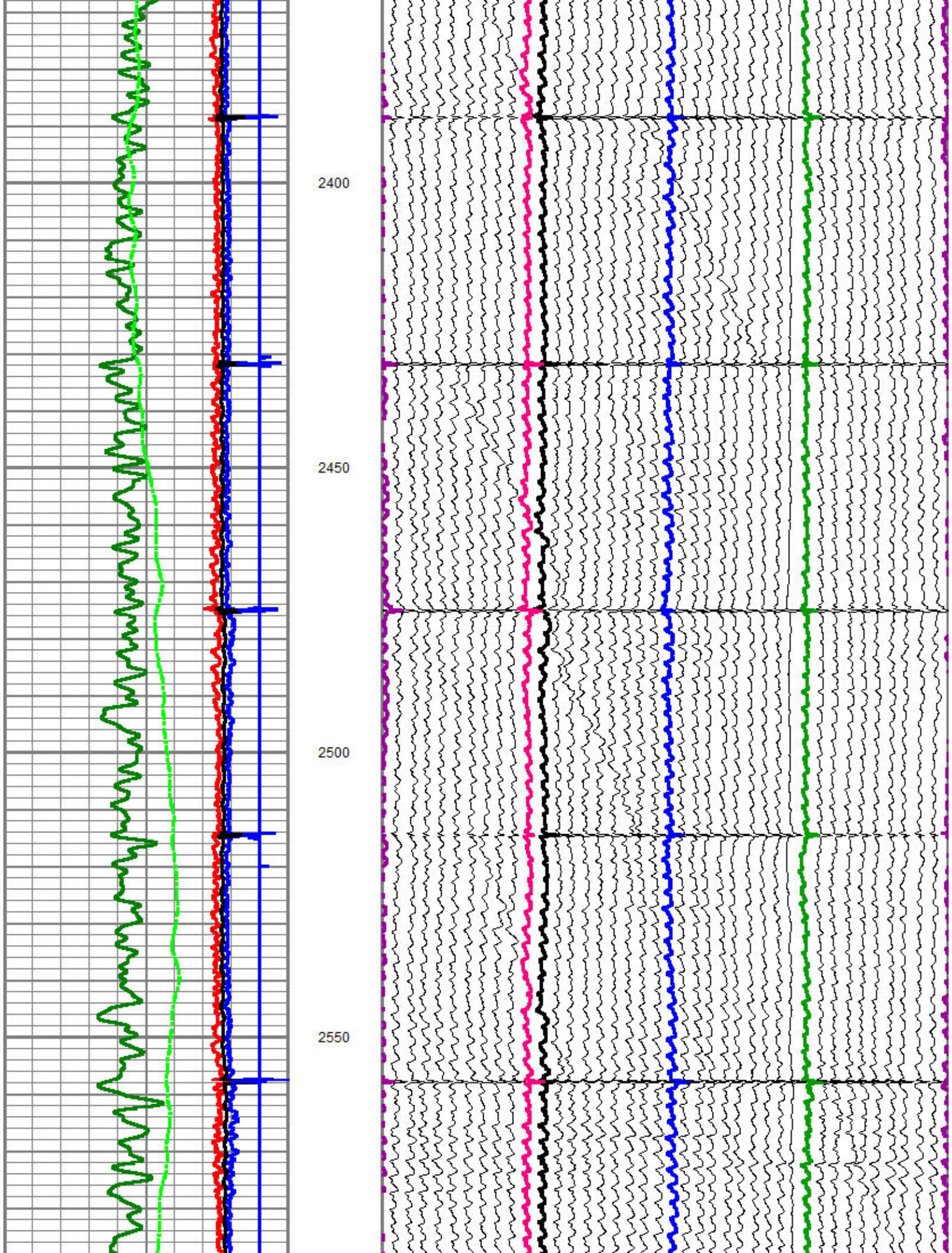


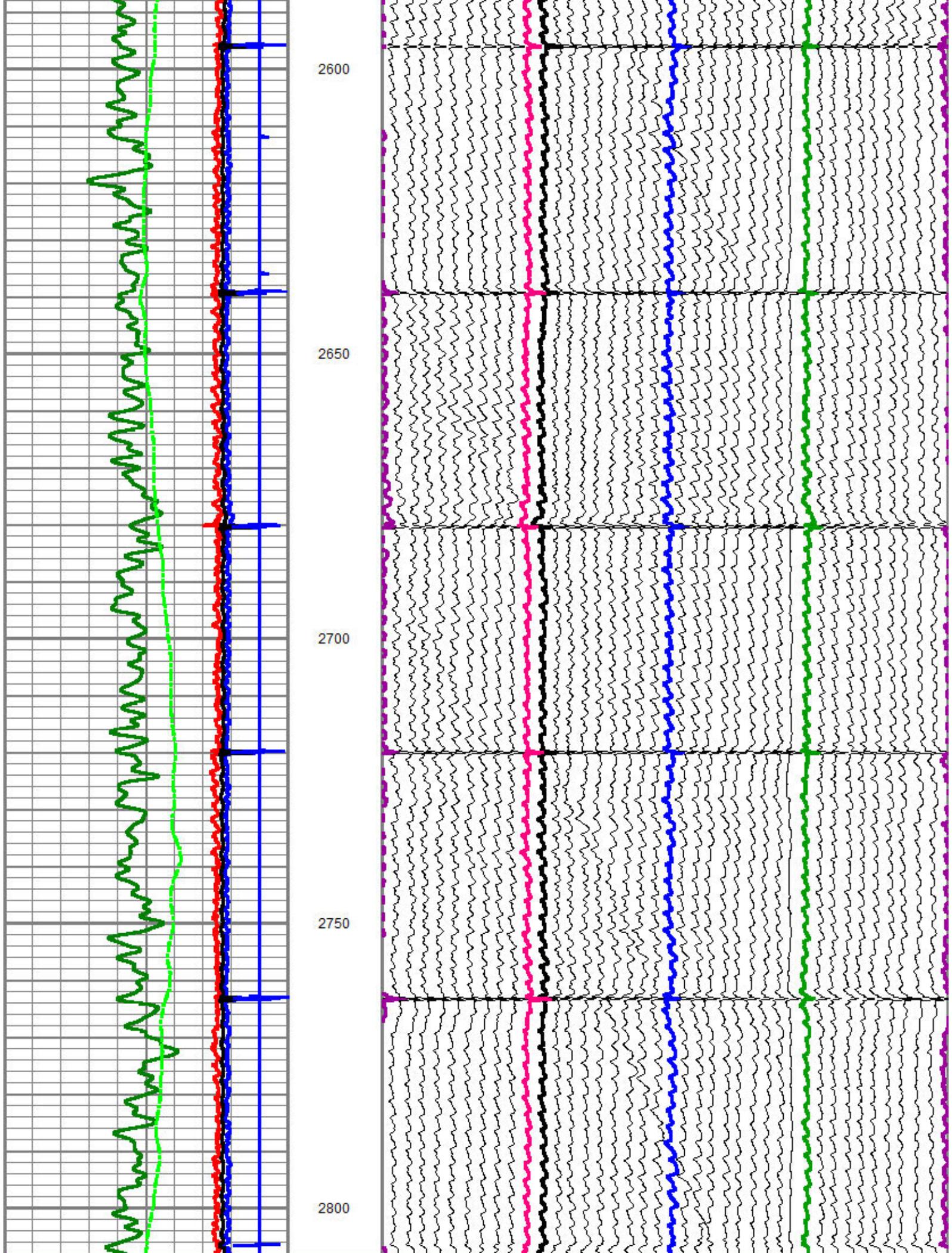


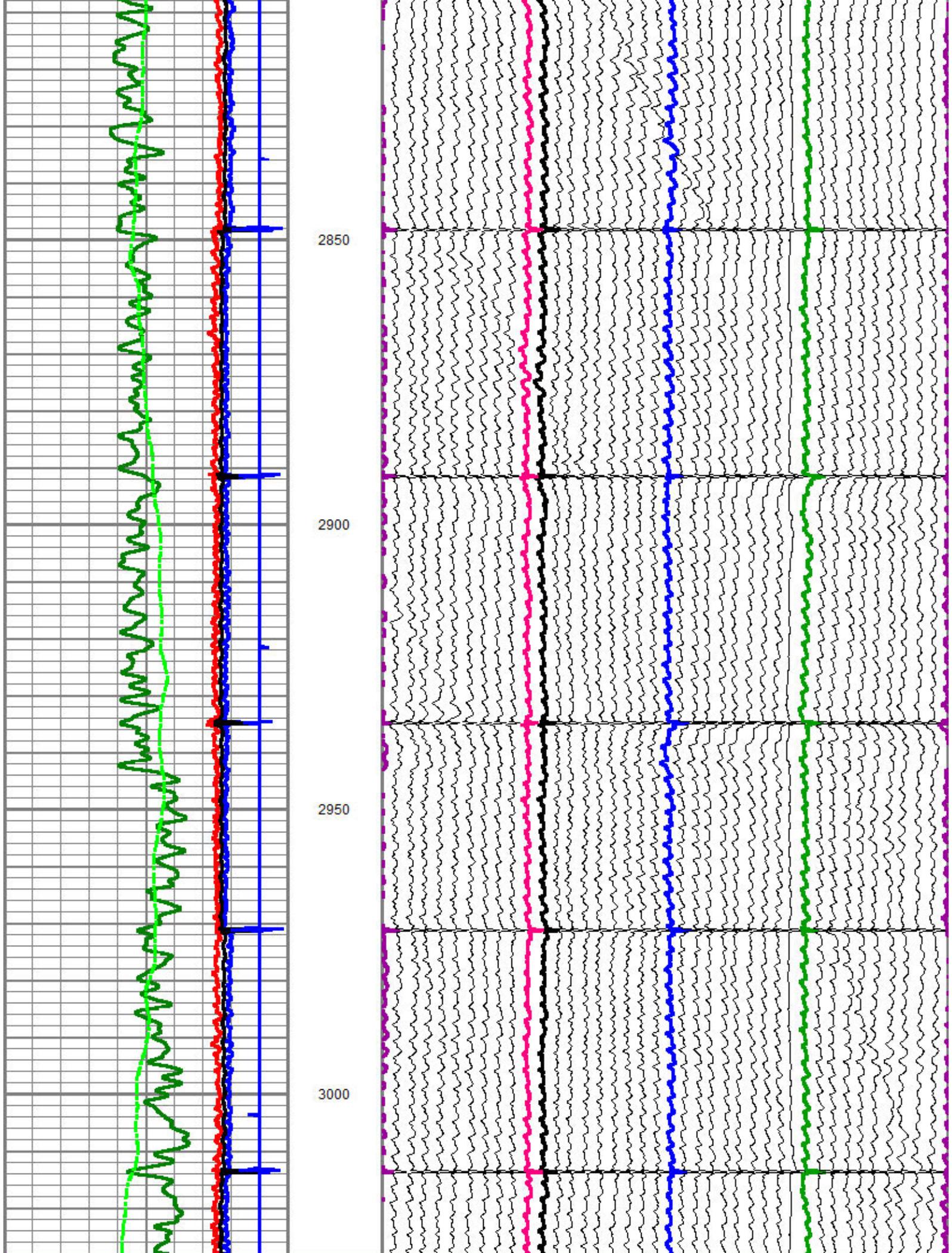


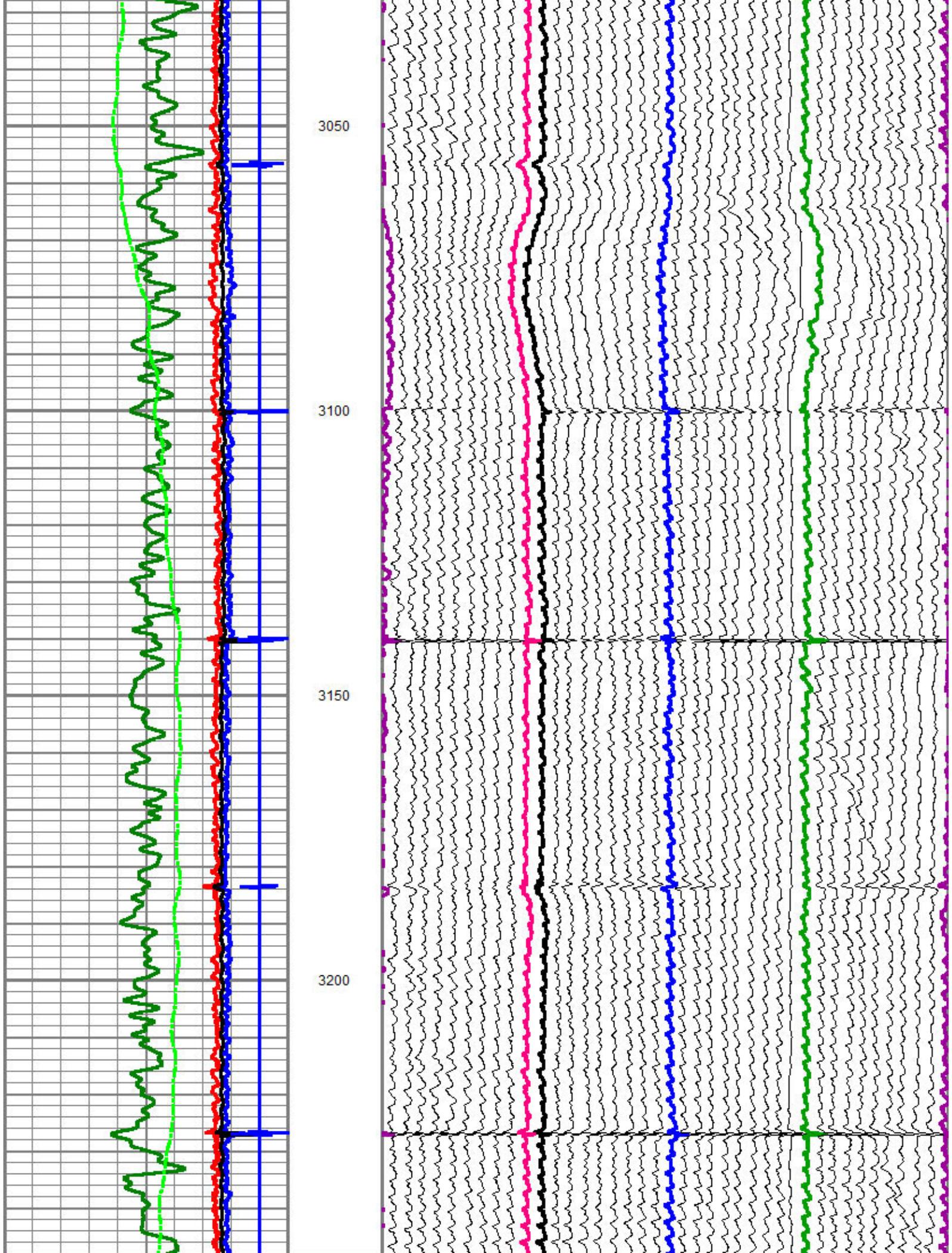
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2200  
2250  
2300  
2350

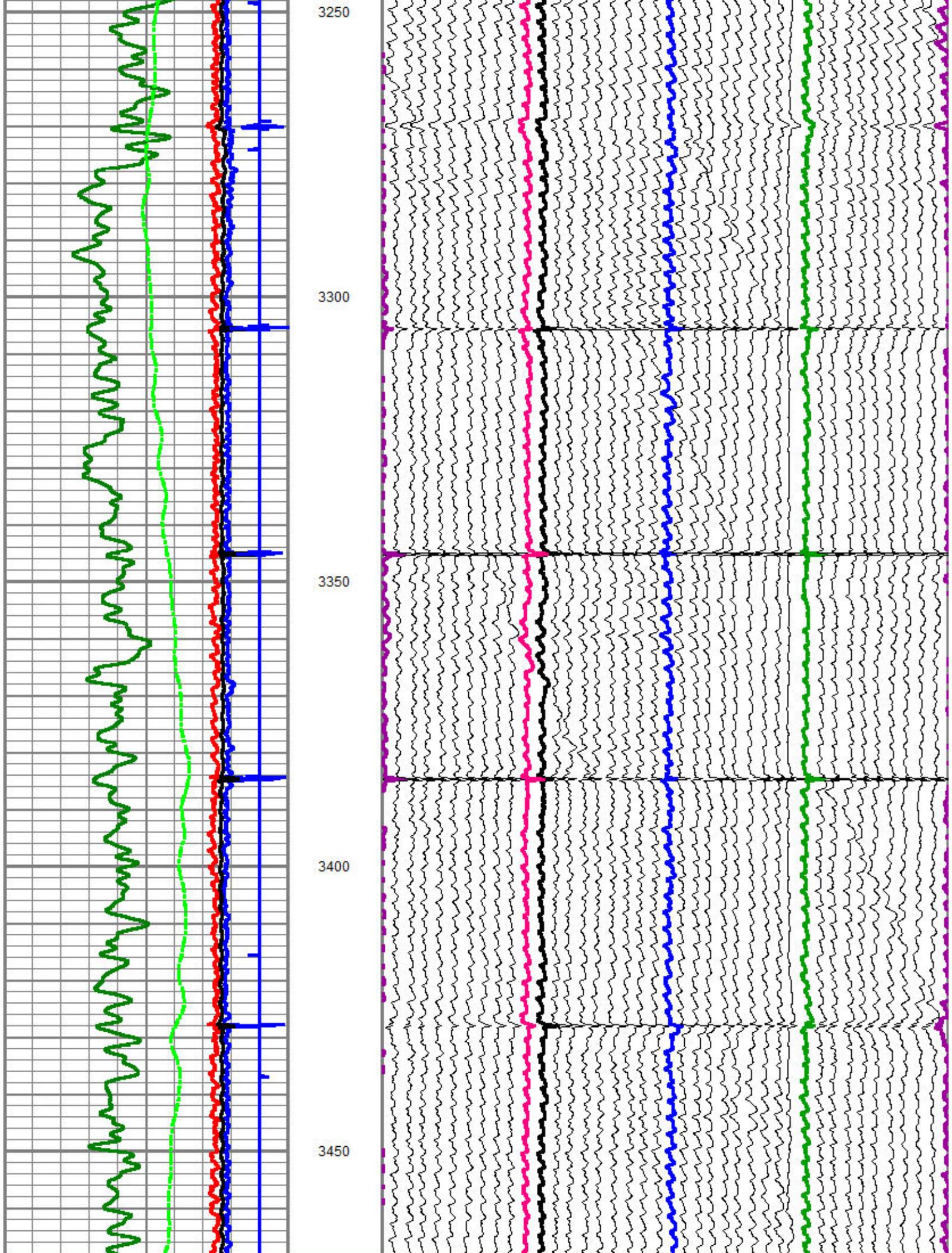


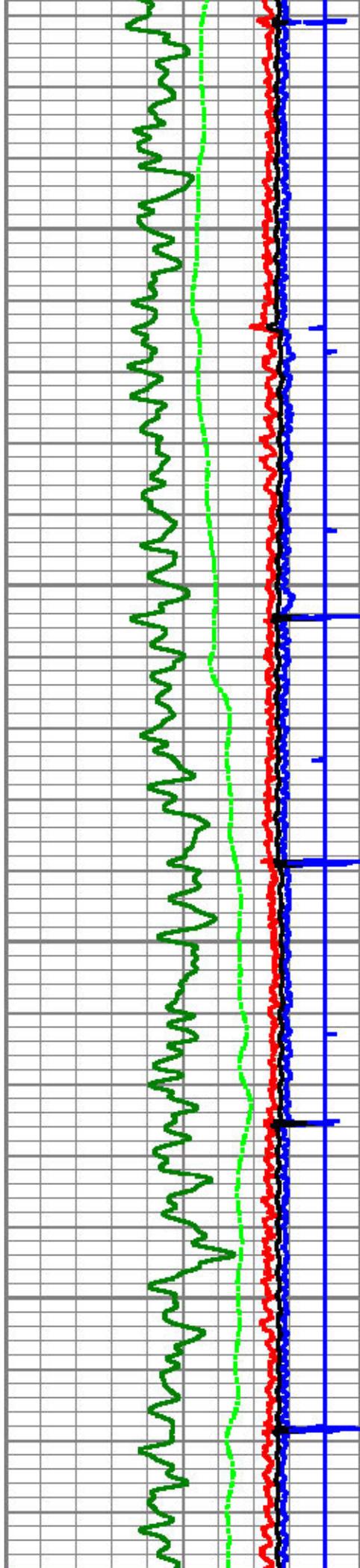










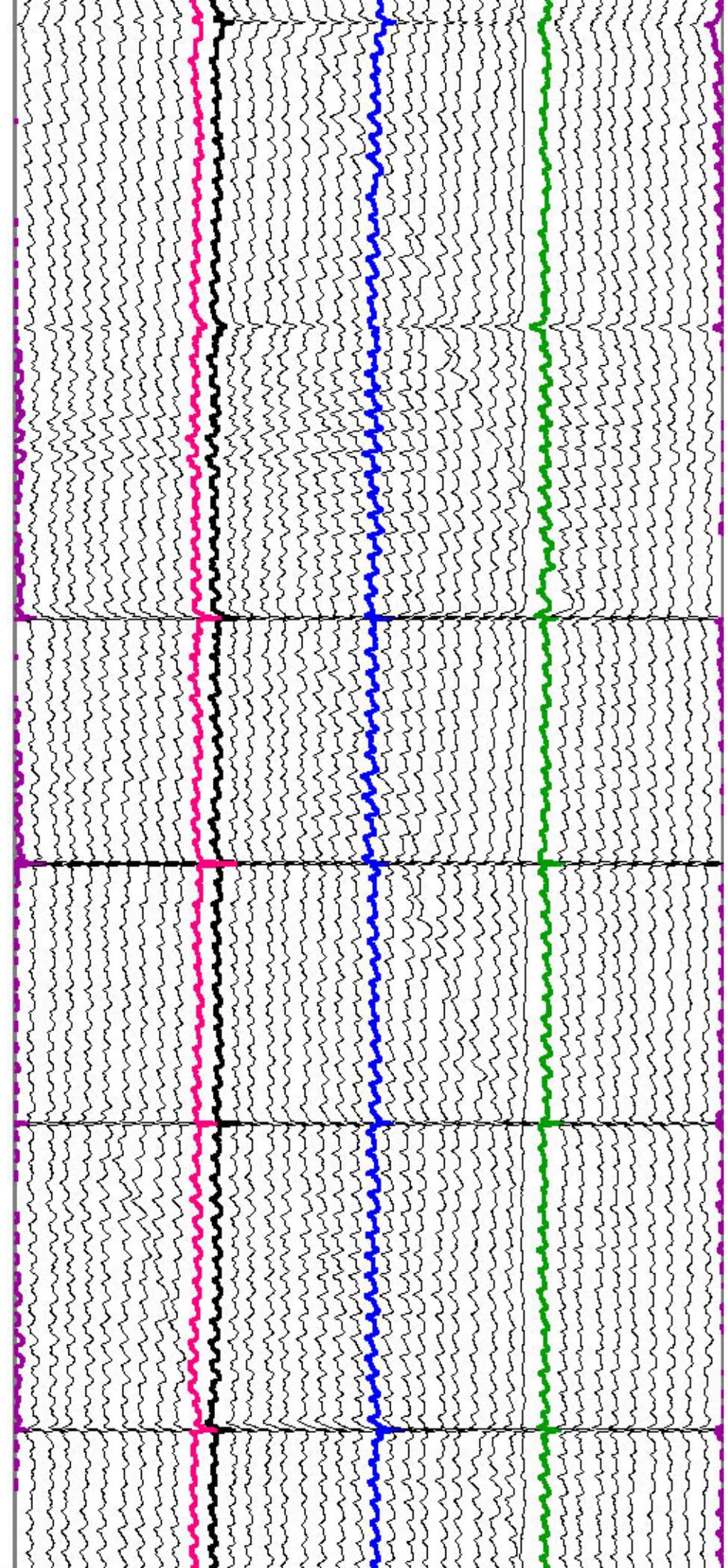


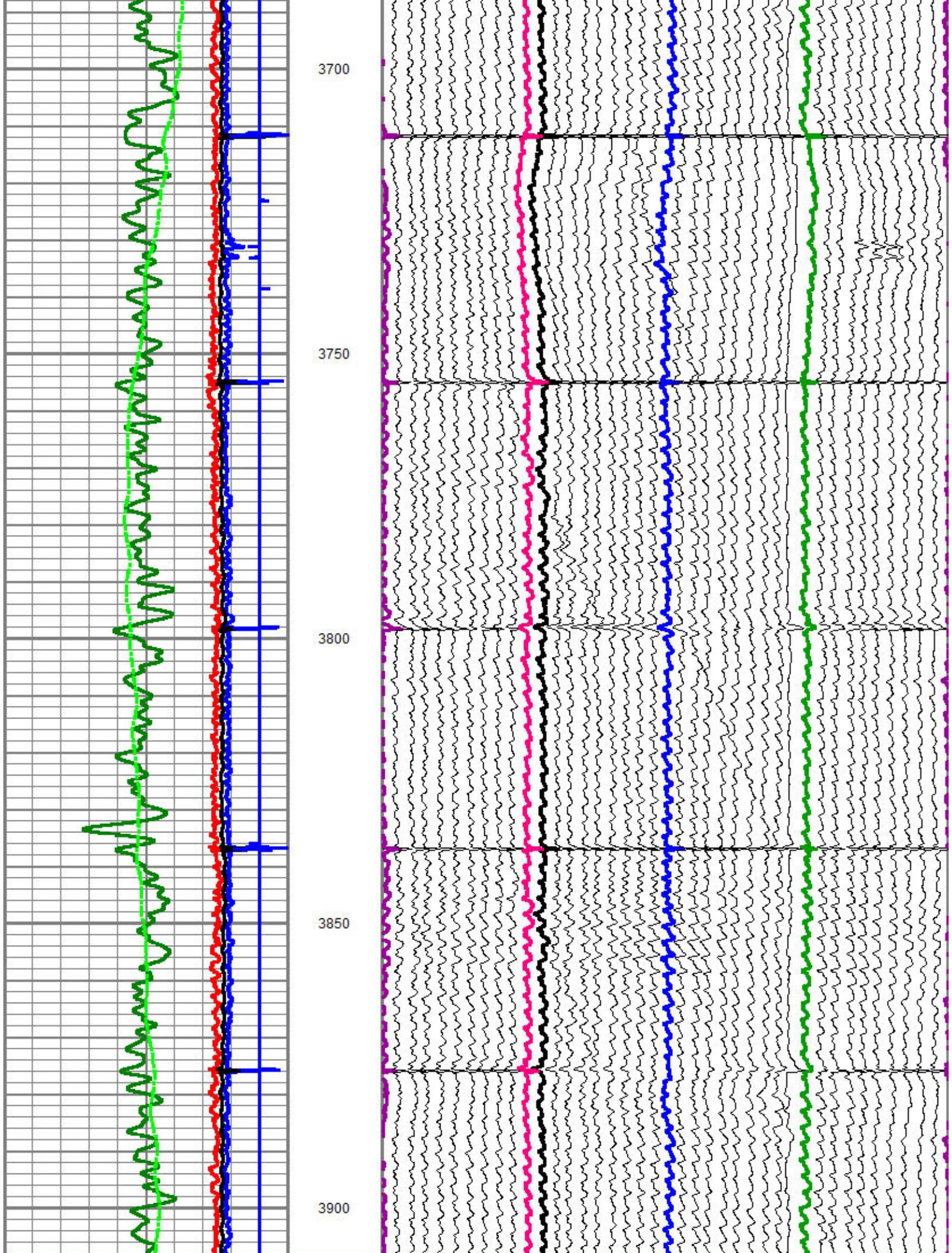
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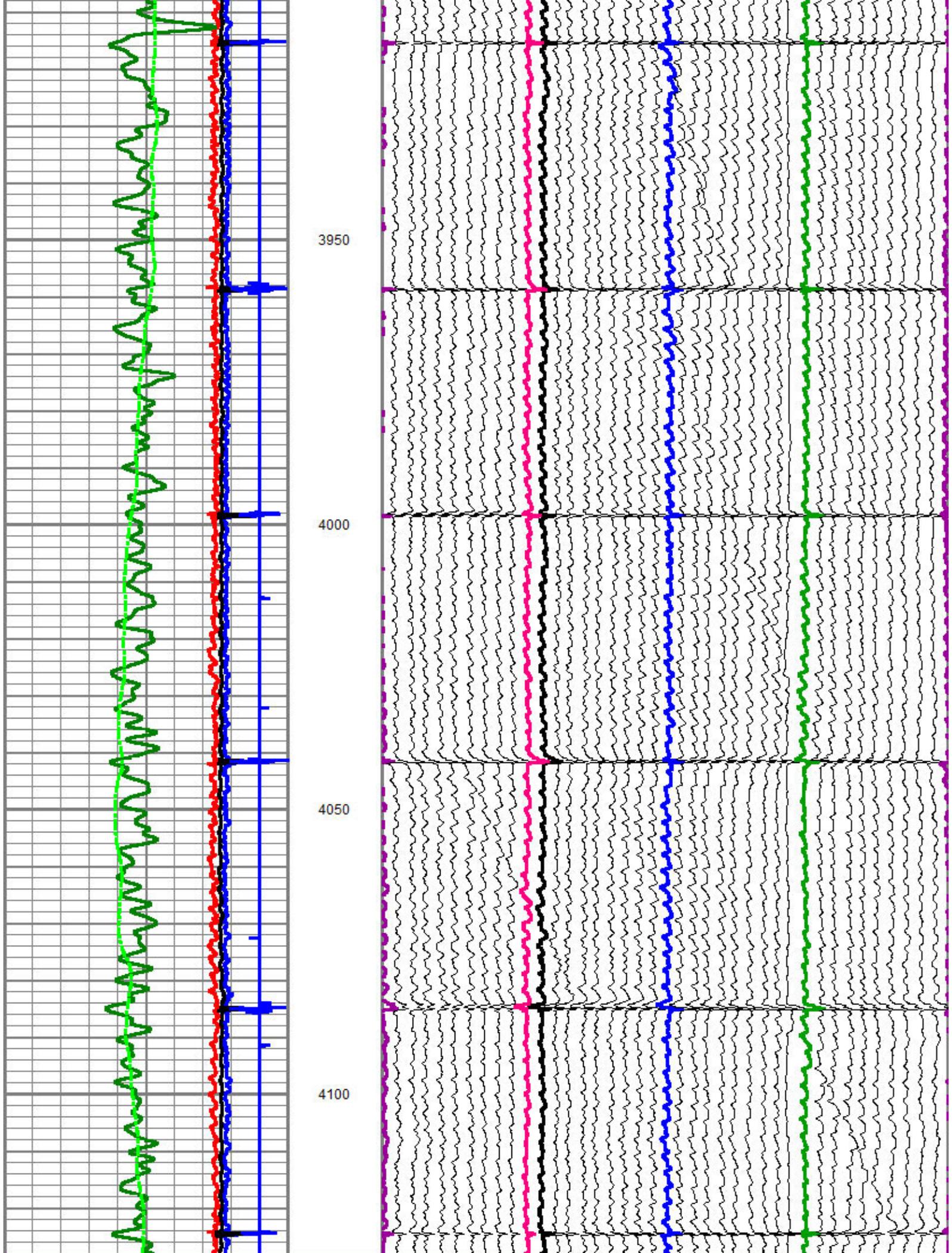
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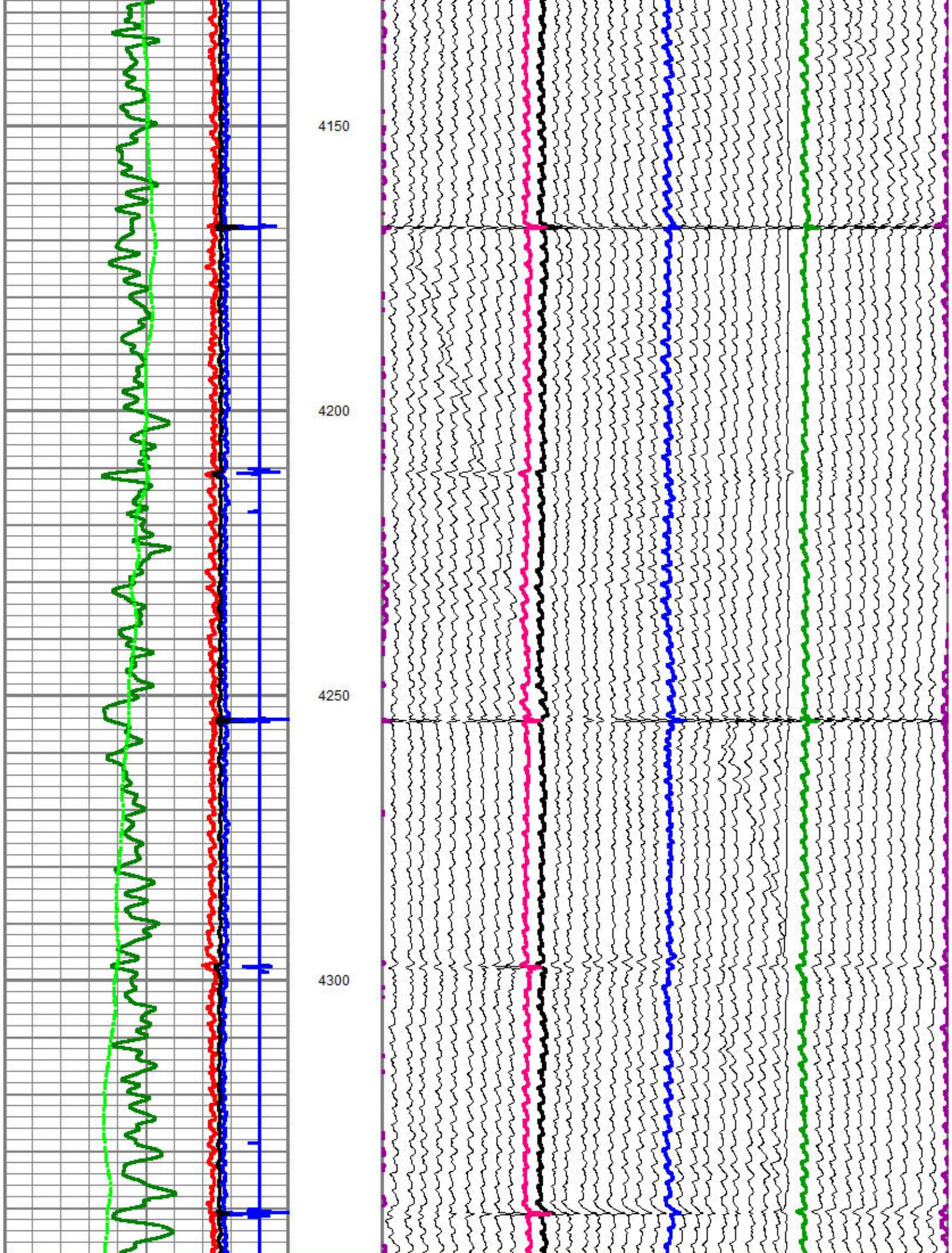
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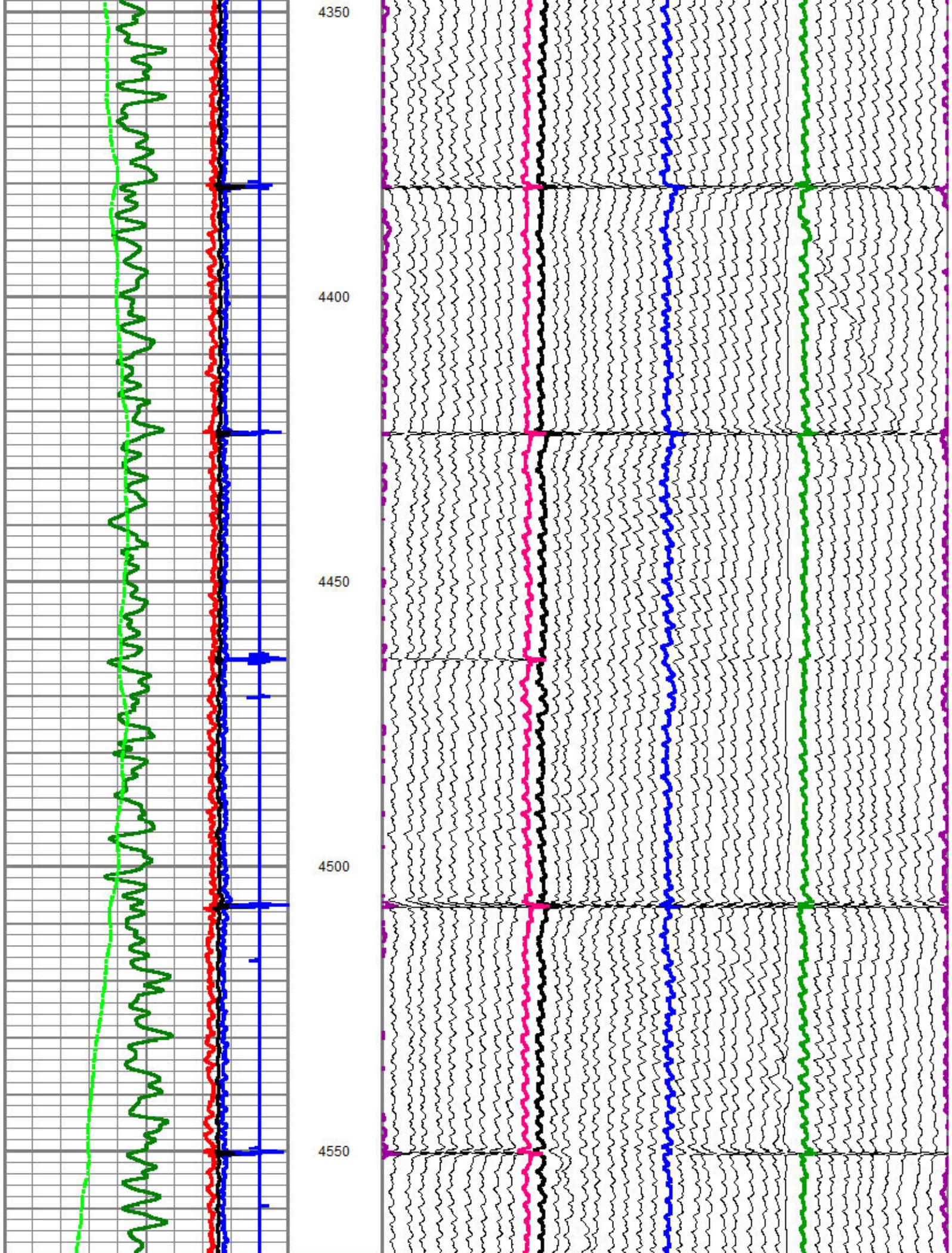
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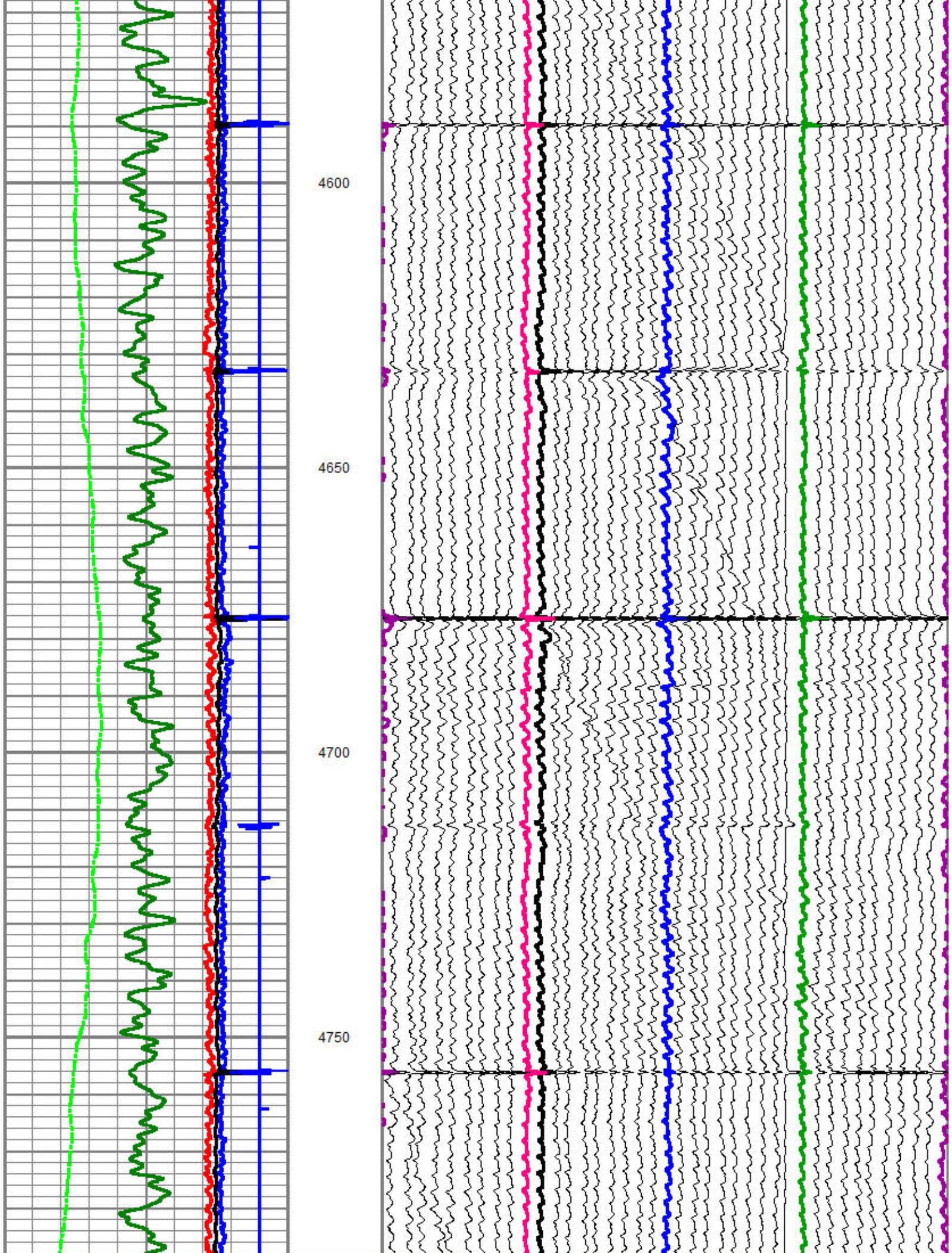


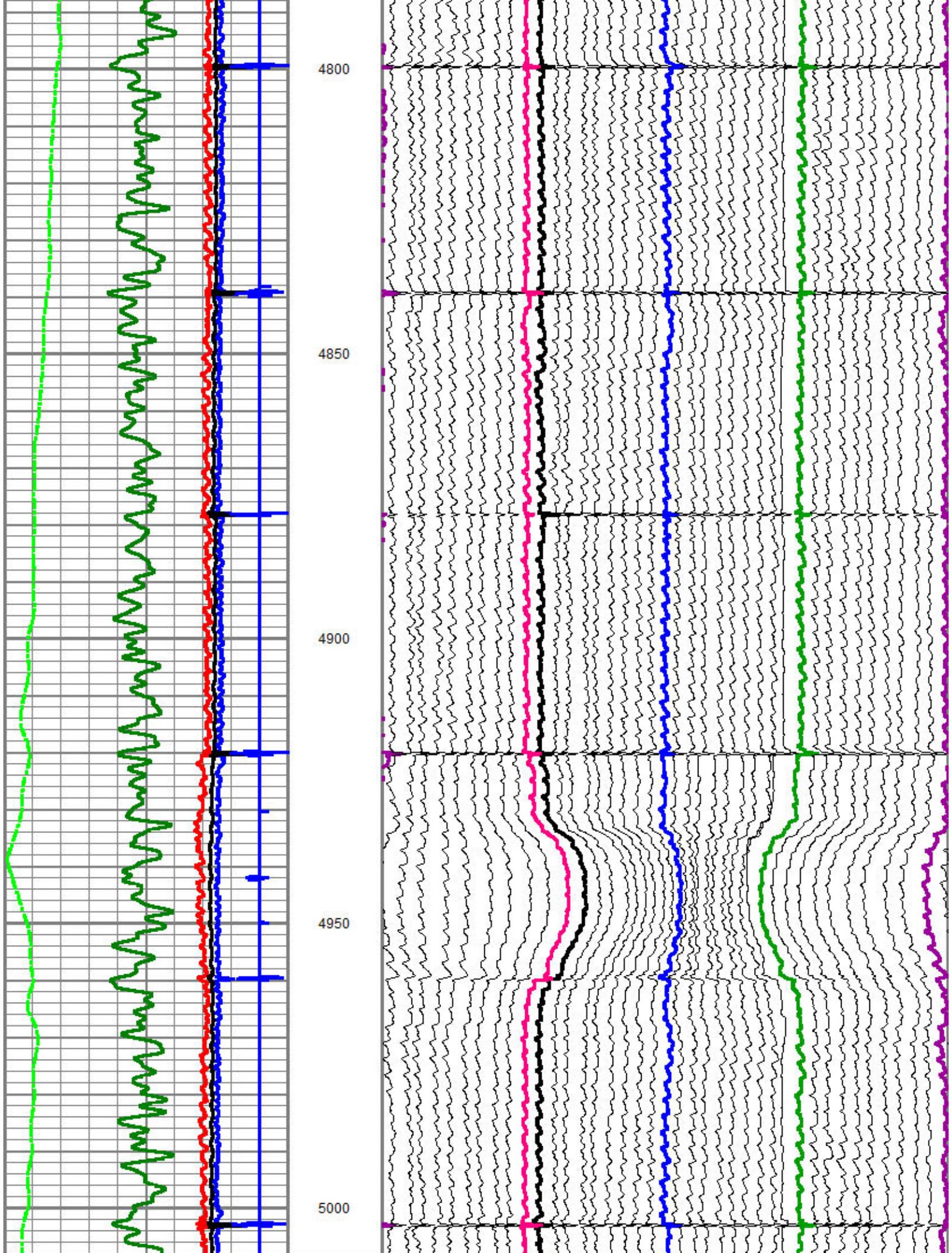


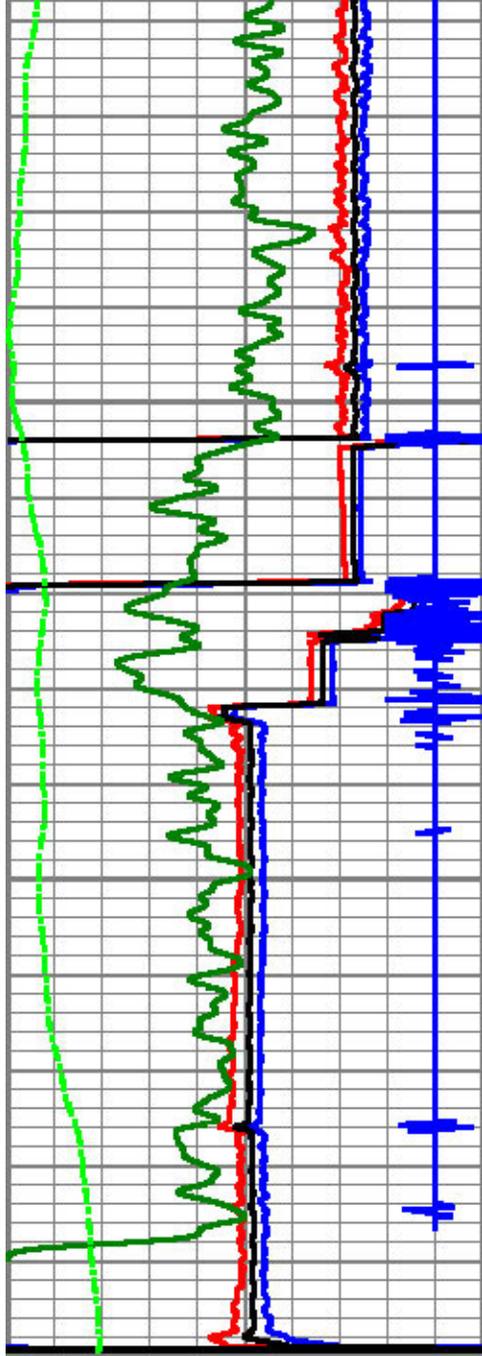










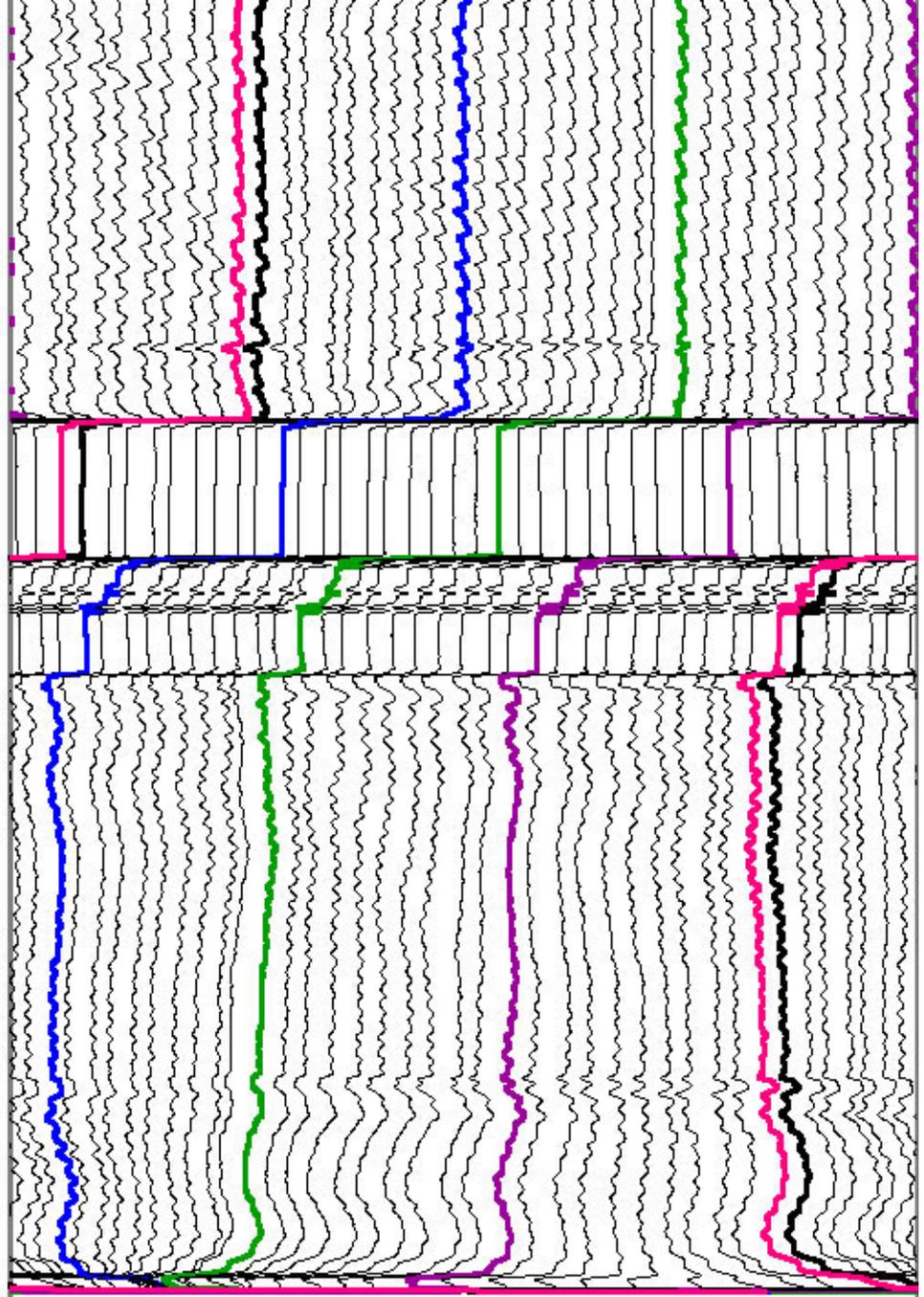


5050

5100

5150

4.5	IDMX (in)	5.5
4.5	IDMN (in)	5.5
4.5	IDAV (in)	5.5
0	GR (GAPI)	150
9	CCL	-1
0	DEVI (°)	20



2.4375	R01 (in)	4.9375
1.875	R10 (in)	4.375
1.25	R20 (in)	3.75
0.625	R30 (in)	3.125
0	R40 (in)	2.5

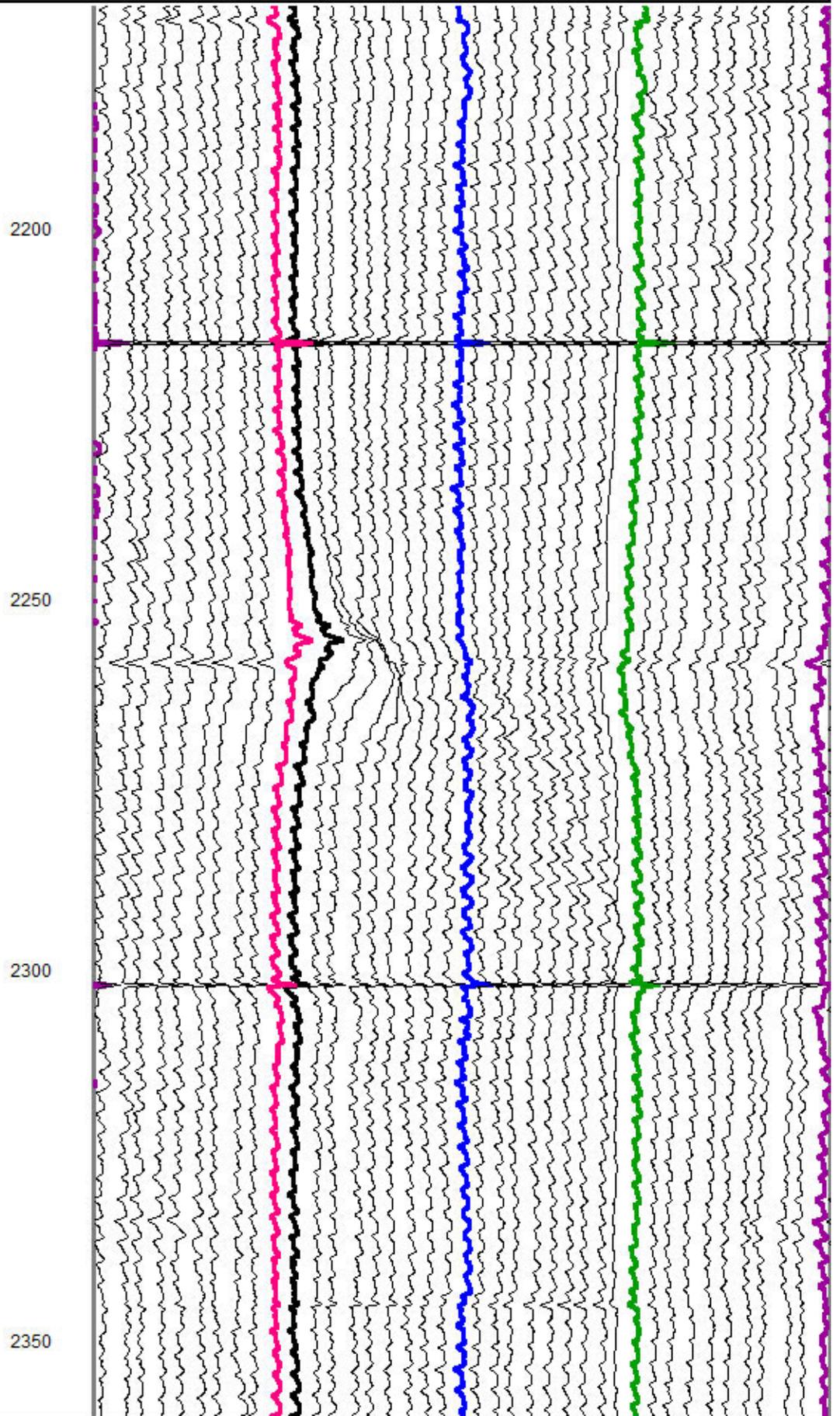
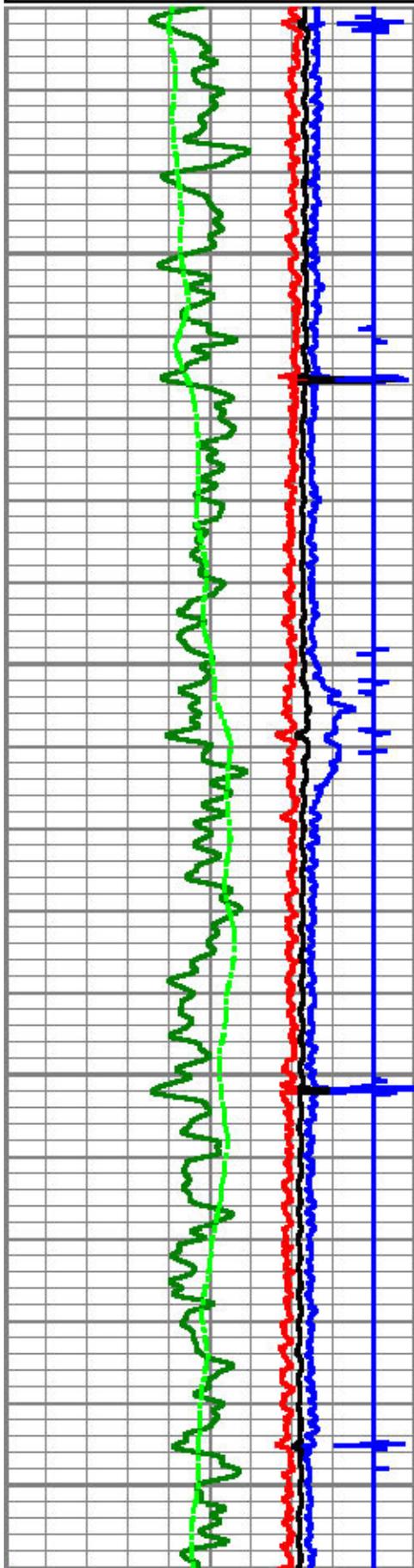


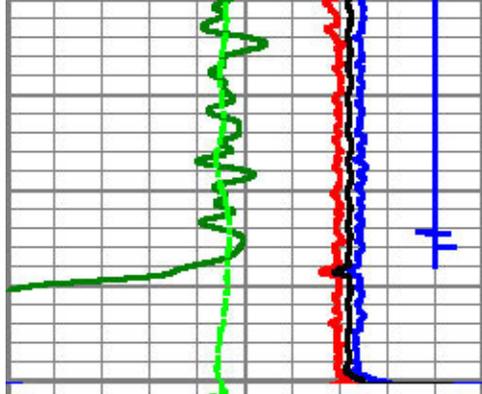
# REPEAT PASS

Database File: 2804.db  
 Dataset Pathname: pass10  
 Presentation Format: ptsmfc40  
 Dataset Creation: Sun Jan 25 19:04:14 2015 by Log 0  
 Charted by: Depth in Feet scaled 1:240

4.5	IDMX (in)	5.5
4.5	IDMN (in)	5.5
4.5	IDAV (in)	5.5
0	GR (GAPI)	150
9	CCL	-1
0	DEVI (°)	20

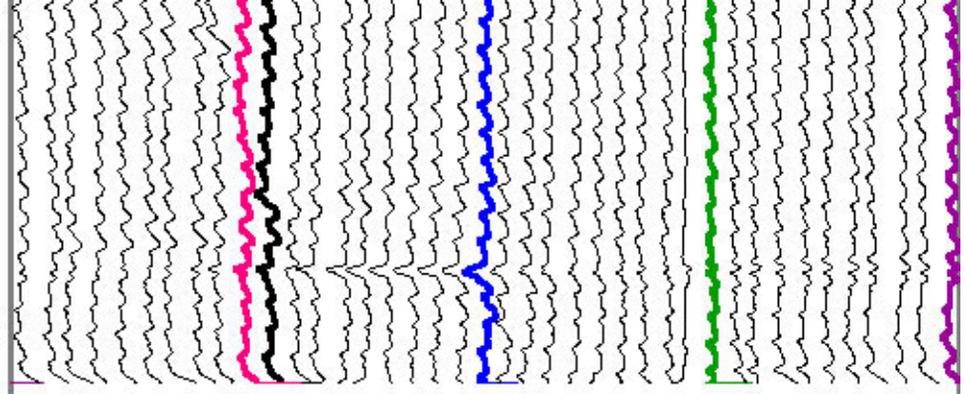
2.4375	R01 (in)	4.9375
1.875	R10 (in)	4.375
1.25	R20 (in)	3.75
0.625	R30 (in)	3.125
0	R40 (in)	2.5





2400

4.5	IDMX (in)	5.5
4.5	IDMN (in)	5.5
4.5	IDAV (in)	5.5
0	GR (GAPI)	150
9	CCL	-1
0	DEVI (°)	20



2.4375	R01 (in)	4.9375
1.875	R10 (in)	4.375
1.25	R20 (in)	3.75
0.625	R30 (in)	3.125
0	R40 (in)	2.5

Calibration Report

Database File: 2804.db  
 Dataset Pathname: pass9  
 Dataset Creation: Sun Jan 25 17:14:57 2015 by Log 0

40 Arm Multi Sensor Caliper Calibration Report

Serial Number: 110814  
 Tool Model: 40incl  
 Performed: Sat Jan 24 17:08:02 2015

Ref ID: (inches)	3.00	4.00	5.00	6.00	7.00
Arm1	1.61	2.08	2.58	3.09	3.56
Arm2	1.60	2.08	2.57	3.07	3.56
Arm3	1.60	2.06	2.57	3.08	3.54
Arm4	1.61	2.08	2.57	3.07	3.55
Arm5	1.60	2.08	2.58	3.08	3.54
Arm6	1.61	2.09	2.57	3.07	3.55
Arm7	1.62	2.10	2.58	3.08	3.54
Arm8	1.60	2.08	2.58	3.08	3.53
Arm9	1.59	2.05	2.56	3.06	3.51
Arm10	1.61	2.09	2.58	3.07	3.53
Arm11	1.60	2.07	2.58	3.08	3.52
Arm12	1.60	2.10	2.58	3.06	3.54
Arm13	1.61	2.12	2.61	3.09	3.55
Arm14	1.60	2.10	2.58	3.07	3.54
Arm15	1.59	2.09	2.58	3.07	3.53
Arm16	1.60	2.10	2.59	3.07	3.54
Arm17	1.61	2.11	2.61	3.10	3.55
Arm18	1.59	2.11	2.60	3.08	3.56
Arm19	1.61	2.11	2.61	3.12	3.56
Arm20	1.59	2.10	2.59	3.08	3.55
Arm21	1.60	2.12	2.62	3.10	3.56
Arm22	1.62	2.13	2.63	3.12	3.58
Arm23	1.62	2.13	2.63	3.12	3.58
Arm24	1.61	2.12	2.62	3.11	3.59
Arm25	1.61	2.12	2.63	3.10	3.59
Arm26	1.61	2.12	2.62	3.11	3.59
Arm27	1.61	2.11	2.62	3.12	3.58
Arm28	1.61	2.12	2.62	3.12	3.60
Arm29	1.59	2.09	2.60	3.11	3.58
Arm30	1.61	2.11	2.61	3.11	3.60
Arm31	1.62	2.12	2.62	3.12	3.60
Arm32	1.62	2.12	2.61	3.12	3.59
Arm33	1.63	2.11	2.61	3.11	3.59
Arm34	1.60	2.10	2.60	3.11	3.60

Arm35	1.60	2.07	2.59	3.10	3.57
Arm36	1.60	2.09	2.58	3.09	3.57
Arm37	1.62	2.11	2.60	3.09	3.59
Arm38	1.61	2.09	2.58	3.09	3.58
Arm39	1.61	2.07	2.58	3.09	3.57
Arm40	1.61	2.08	2.57	3.06	3.57

\* = Bad Arm Flag

### Inclinometer Calibration Report

Performed:	Sat Jan 24 17:34:08 2015				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-3710.00	3588.00	-1.00	1.00	gee
Y Accelerometer	-3668.00	3670.00	-1.00	1.00	gee
Z Accelerometer	15.38	3636.62	0.00	1.00	gee

### Gamma Ray Calibration Report

Serial Number:	FW1311-4	
Tool Model:	Probe275	
Performed:	Sat Jan 24 17:41:23 2015	
Calibrator Value:	1022.0	GAPI
Background Reading:	71.7	cps
Calibrator Reading:	1479.2	cps
Sensitivity:	0.7261	GAPI/cps

### Segmented Cement Bond Log Calibration Report

Serial Number:	FW1408-26	
Tool Model:	RBTC3	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	59.255	ft

Master Calibration, performed Sat Jan 24 17:58:31 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.013	0.929	2.000	71.921	74.222	2.944
CAL	-0.015	1.022				
5'	-0.017	0.934	2.000	71.921	73.574	3.239
SUM						
S1	0.045	0.941	0.000	100.000	120.000	-0.563
S2	-0.011	0.945	0.000	100.000	104.590	1.149
S3	-0.012	0.935	0.000	100.000	105.598	1.275
S4	-0.018	0.929	0.000	100.000	105.666	1.873
S5	-0.016	0.928	0.000	100.000	105.964	1.674
S6	-0.012	0.930	0.000	100.000	106.113	1.269
S7	-0.011	0.931	0.000	100.000	106.117	1.193
S8	-0.017	0.938	0.000	100.000	104.654	1.787

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset

	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.015	1.022	1.000	0.000

Air Zero Calibration, performed Mon Dec 15 09:56:27 2014:

	Raw (v)		Calibrated (v)		Results
	Zero		Zero		Offset
3'	0.000		0.000		0.000
5'	0.000		0.000		0.000
SUM					
S1	0.000		0.000		0.000
S2	0.000		0.000		0.000
S3	0.000		0.000		0.000
S4	0.000		0.000		0.000
S5	0.000		0.000		0.000
S6	0.000		0.000		0.000
S7	0.000		0.000		0.000
S8	0.000		0.000		0.000

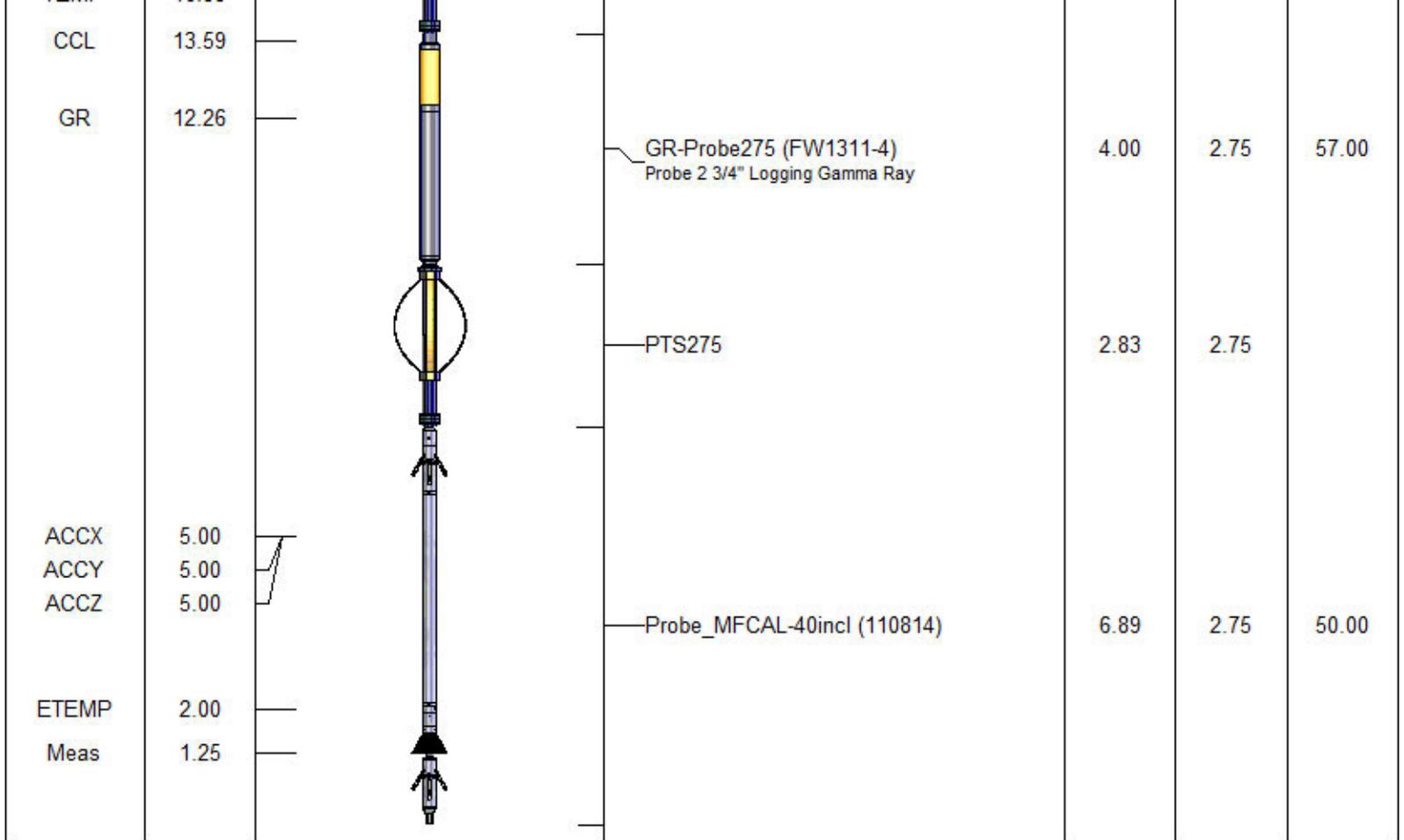
### Temperature Calibration Report

Serial Number: FW1408-26  
 Tool Model: RBTC3  
 Performed: Sun Jun 13 13:33:21 1993

	Reference		Reading	
Low Reference:	0.00	degF	0.00	degC
High Reference:	1.00	degF	1.00	degC

Gain: 1.00  
 Offset: 0.00  
 Delta Spacing: 1

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)	
			PTS275	2.83	2.75		
WV3FT	20.80			RBT-RBTC3 (FW1408-26)	9.25	2.75	100.00
WVFCAL	20.80						
WVFS1	20.80						
WVFS2	20.80						
WVFS3	20.80						
WVFS4	20.80						
WVFS5	20.80						
WVFS6	20.80						
WVFS7	20.80						
WVFS8	20.80						
WV5FT	19.80		PTS275	2.83	2.75		
TEMP	16.55						



Dataset: 2804.db: field/well/run1/pass9  
 Total Length: 28.64 ft  
 Total Weight: 207.00 lb  
 O.D.: 3.71 in

	<b>Company</b> WHITING PETOLEUM
	<b>Well</b> RAZOR 33M-2804
	<b>Field</b> WILDCAT
	<b>County</b> WELD
	<b>State</b> COLORADO