



**COMPENSATED  
DENSITY/NEUTRON  
PE/LOG**

Company WOOLSEY OPERATING COMPANY, LLC.  
Well HUBBELL #2  
Field BELLEFONT  
County FORD  
State KANSAS

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County FORD State KANSAS

Location: API # : 15-057-20987-00-00  
1578' FNL & 1207' FWL  
SEC 23 TWP 25S RGE 21W  
Permanent Datum GROUND LEVEL Elevation 2310'  
Log Measured From KELLY BUSHING 12' A.G.L.  
Drilling Measured From KELLY BUSHING  
Elevation  
K.B. 2322'  
D.F. 2320  
G.L. 2310

Date	10/31/17
Run Number	ONE
Depth Driller	4900
Depth Logger	4904
Bottom Logged Interval	4880
Top Log Interval	2300
Casing Driller	8 5/8" @ 789
Casing Logger	789
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.3/54
pH / Fluid Loss	9.5/9.6
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.60@52
Rmt @ Meas. Temp	.45@52
Rmc @ Meas. Temp	.72@52
Source of Rmf / Rmc	MEASURED
Rm @ BHT	25@124
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	///
Maximum Recorded Temperature	124F
Equipment Number	4010
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	BILLY KLAVER

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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**

THANK YOU FOR USING ELI WIRELINE, HAYS, KS. (785) 628-6395

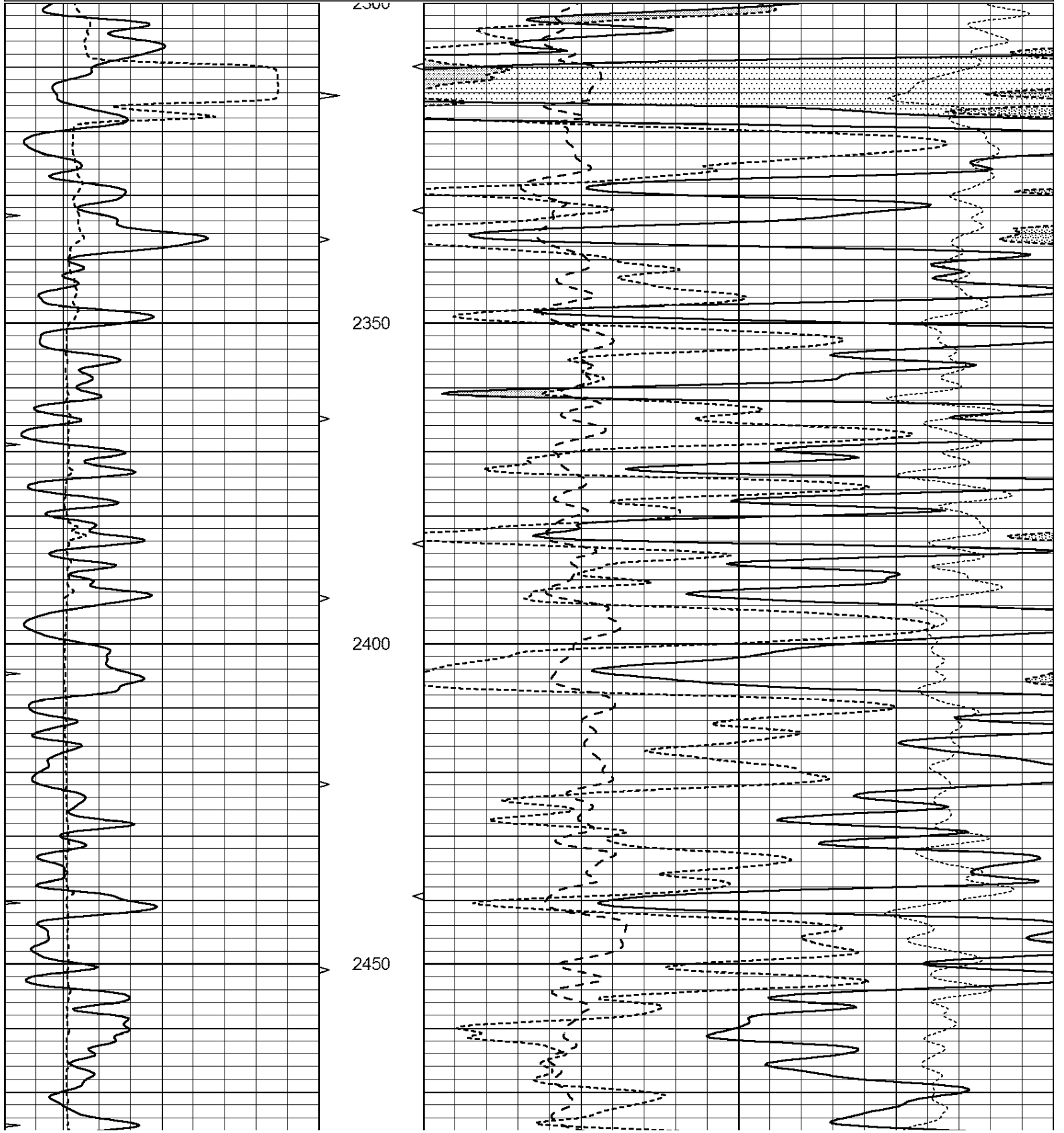
DIRECTIONS  
OFFERLE WEST TO RD 134,  
SOUTH 1.5 MILES, EAST INTO.

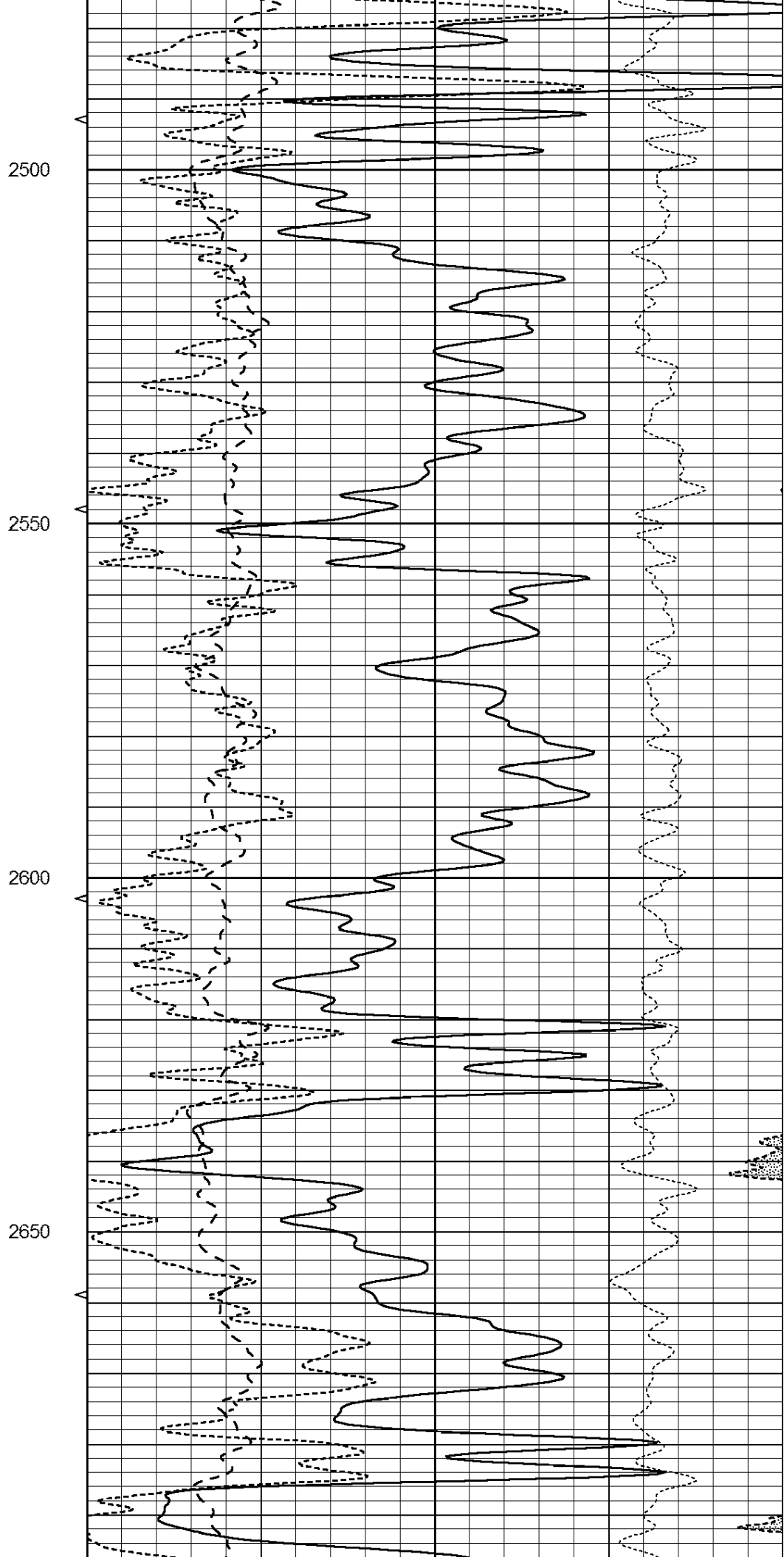
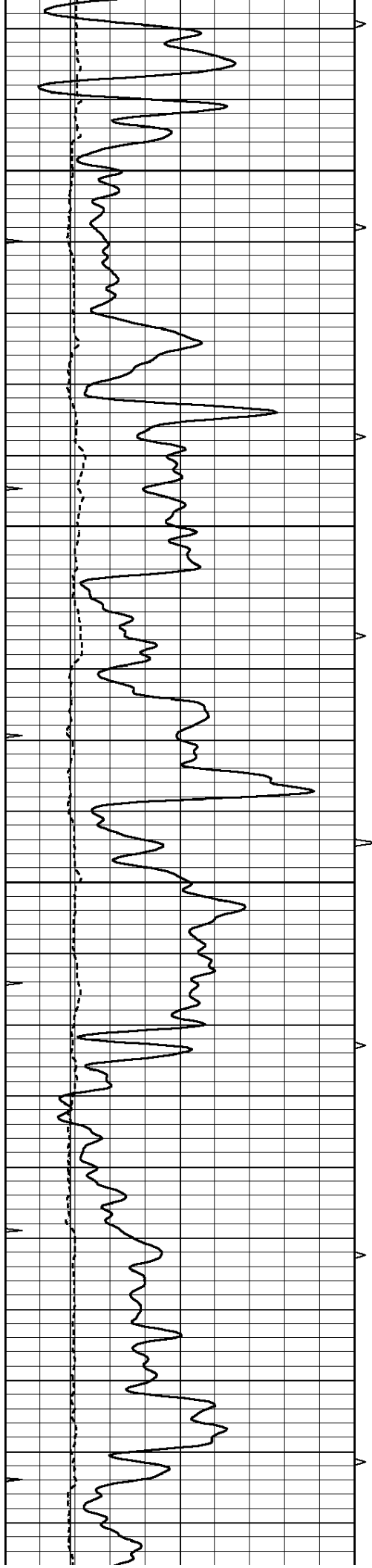


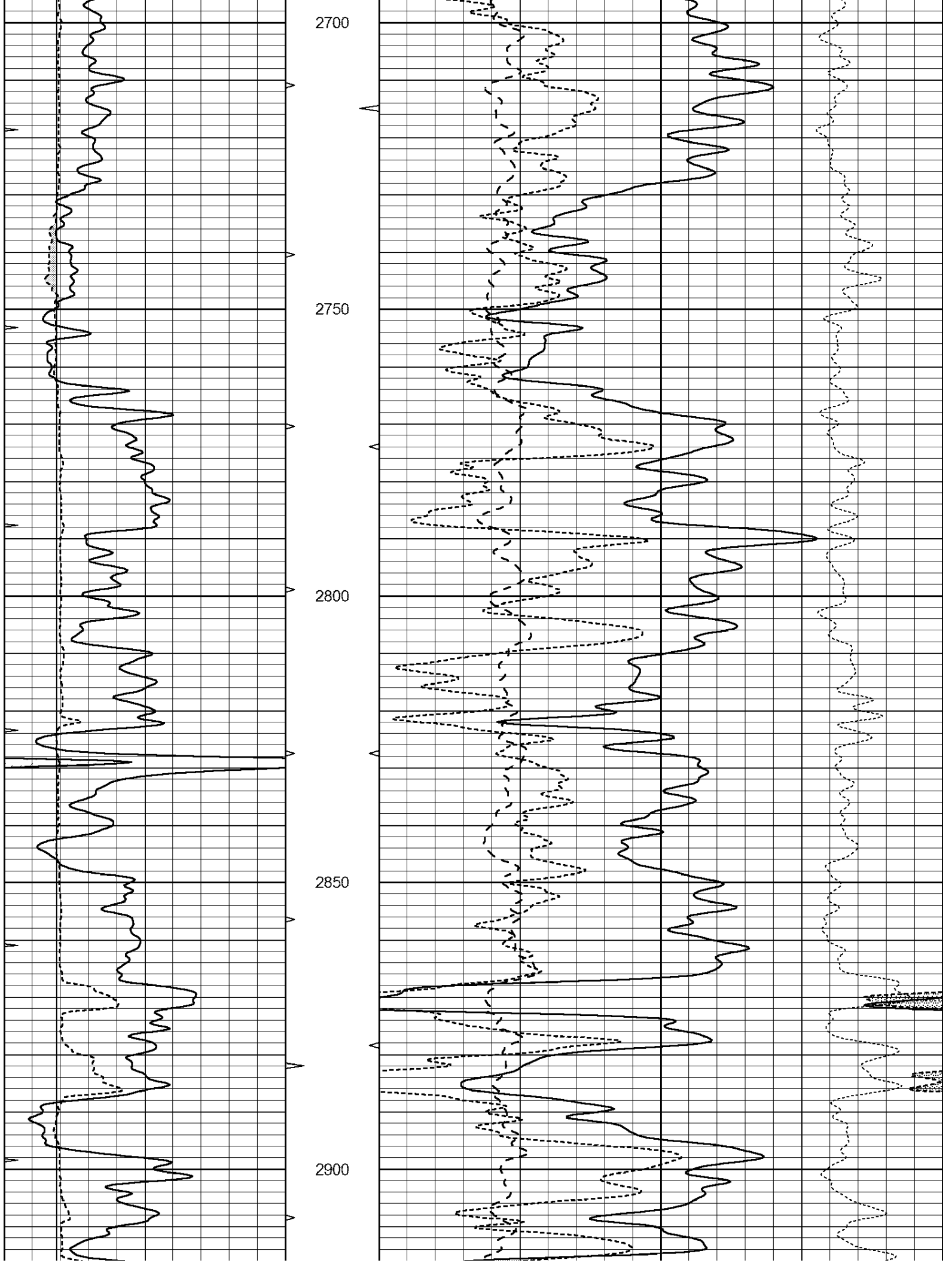
**MAIN PASS**

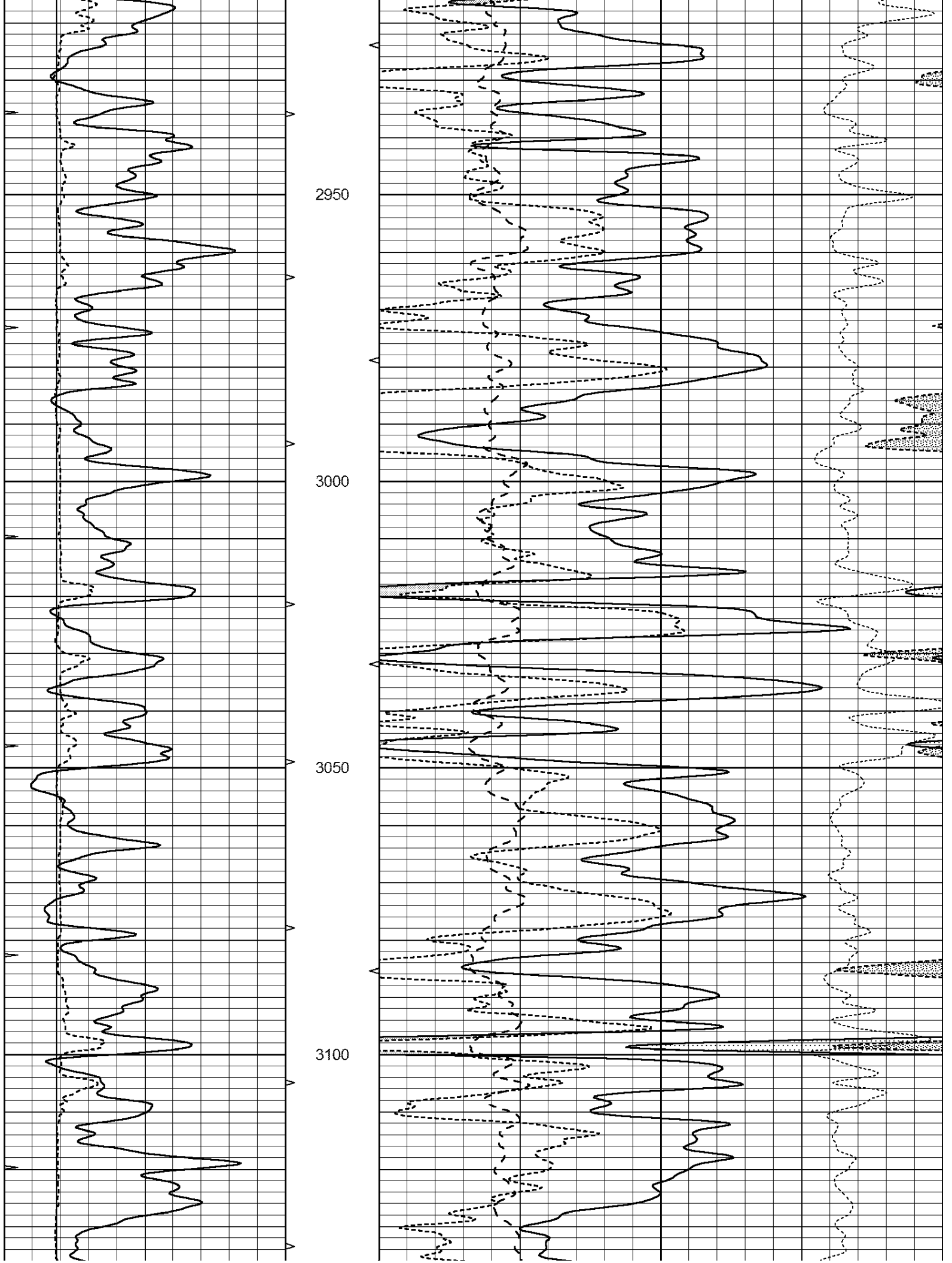
Database File: 2105pe.db  
 Dataset Pathname: pass3.1  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Tue Oct 31 13:29:04 2017 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

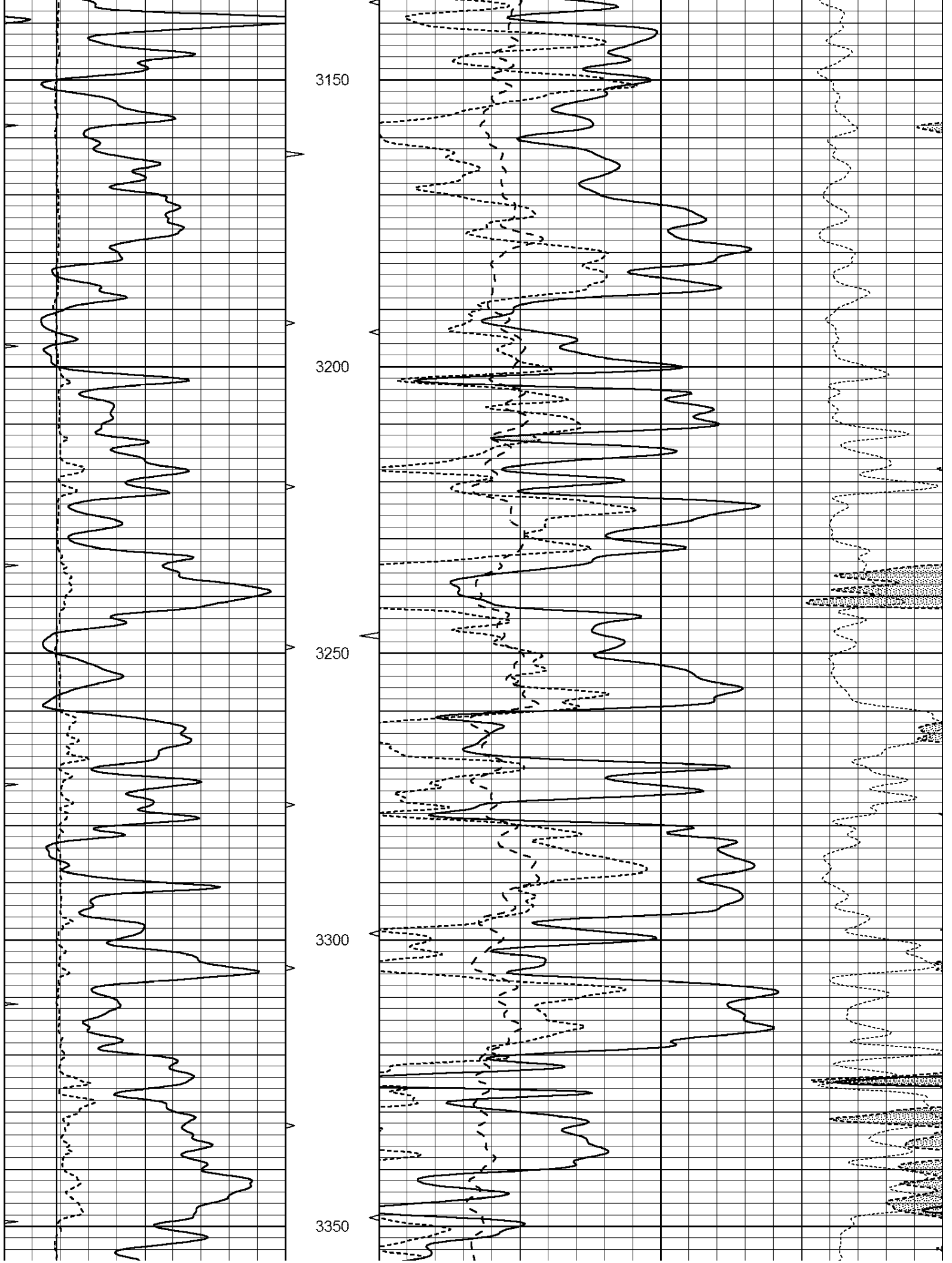
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					

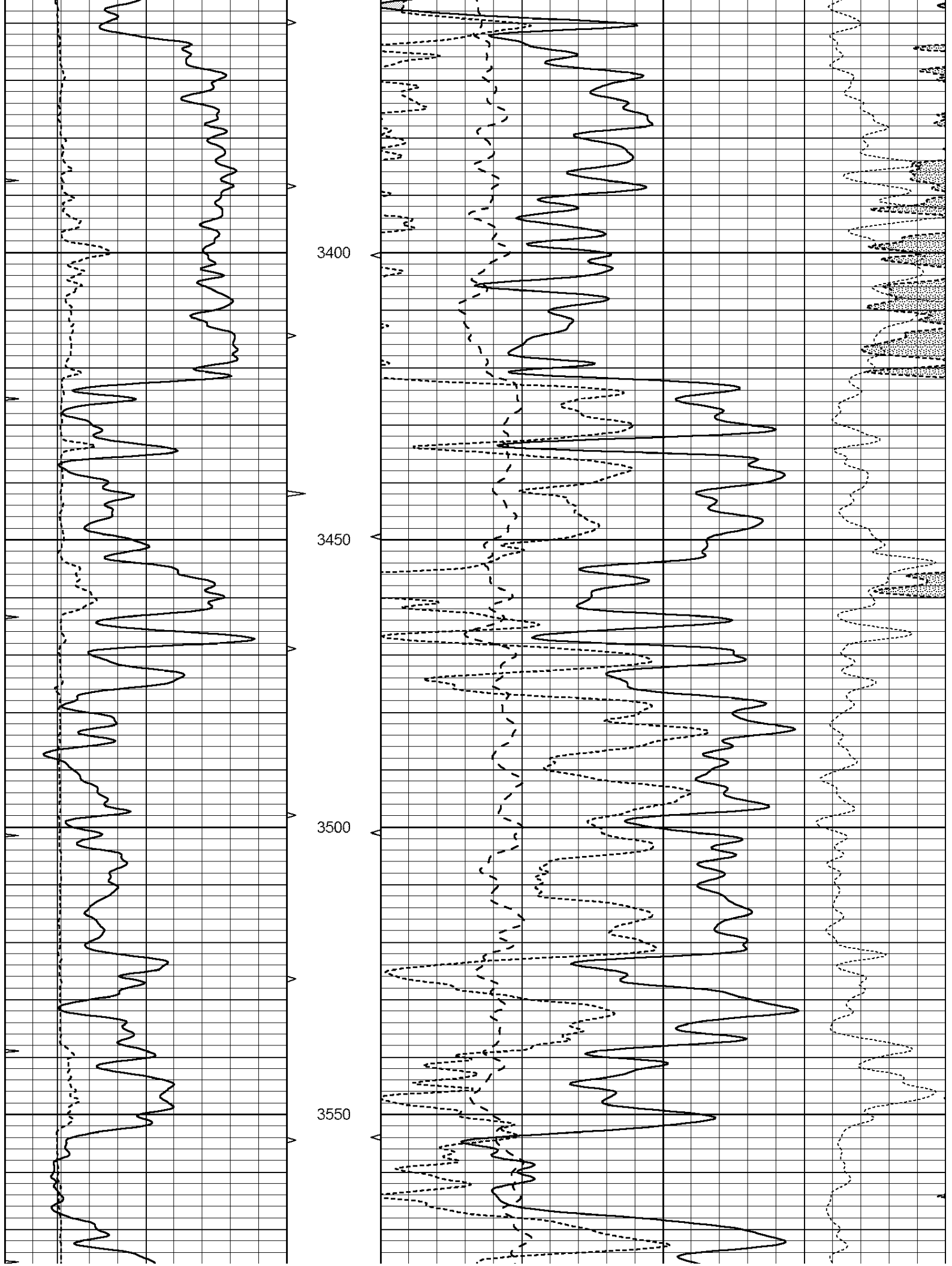


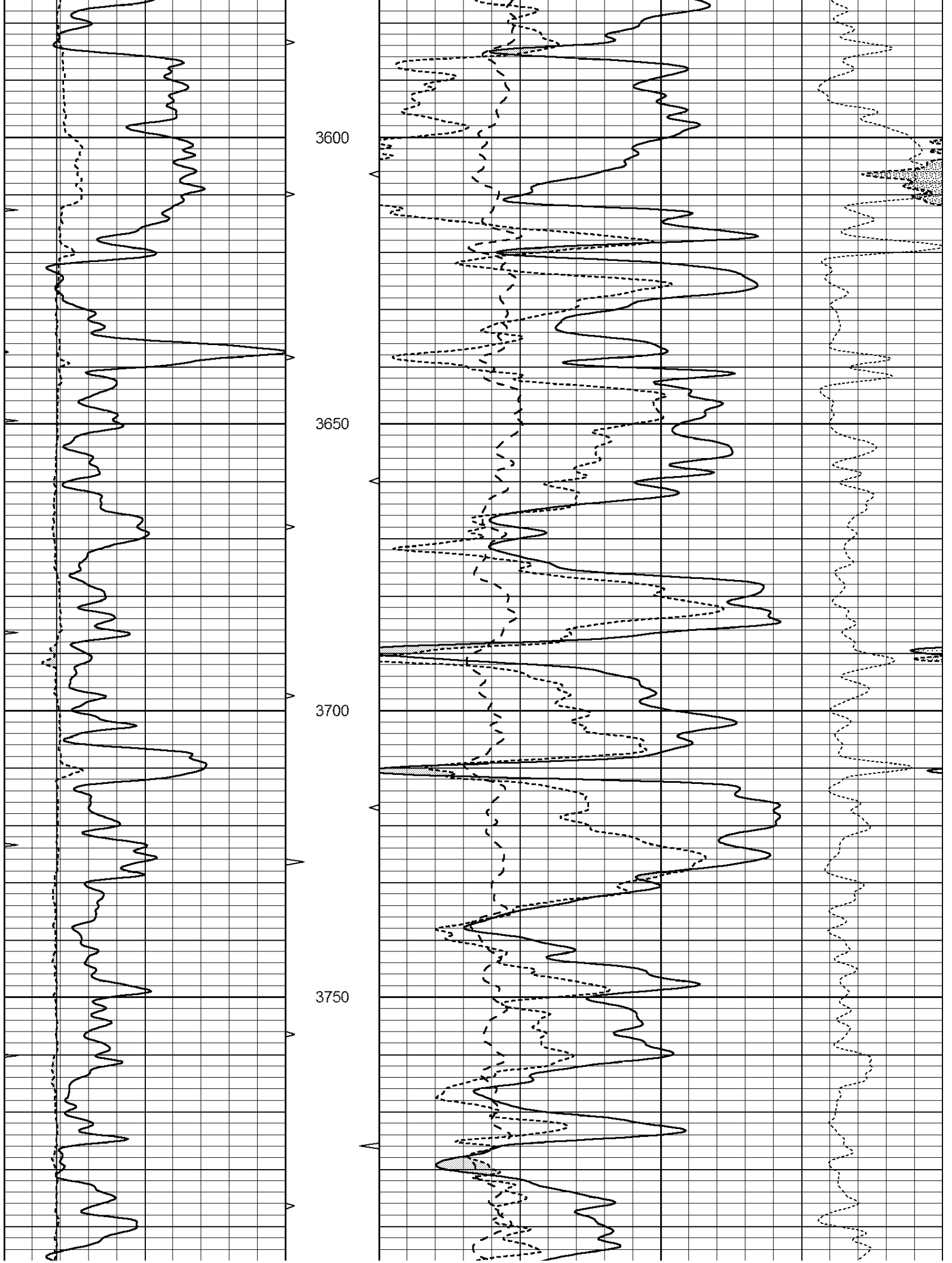


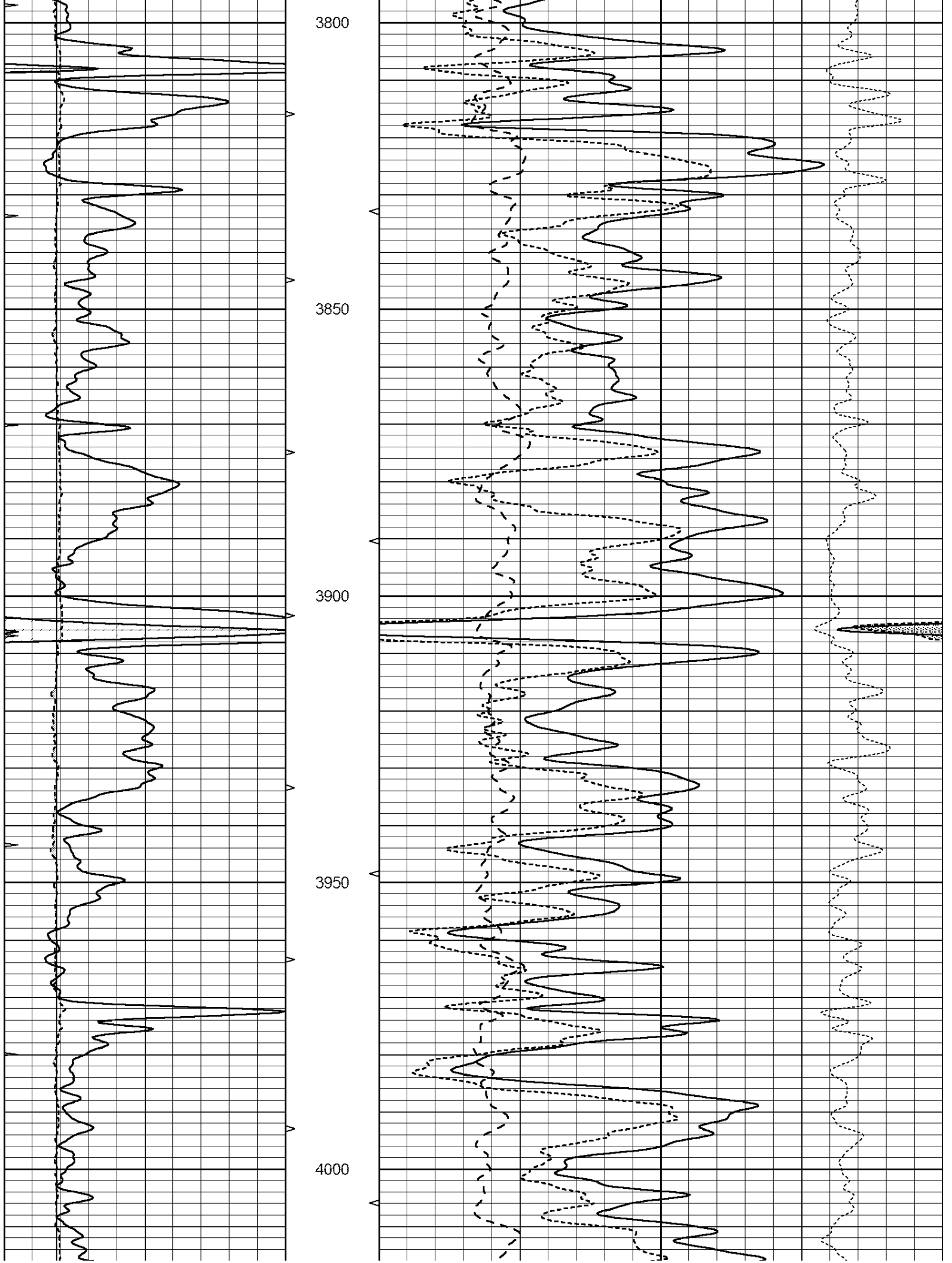


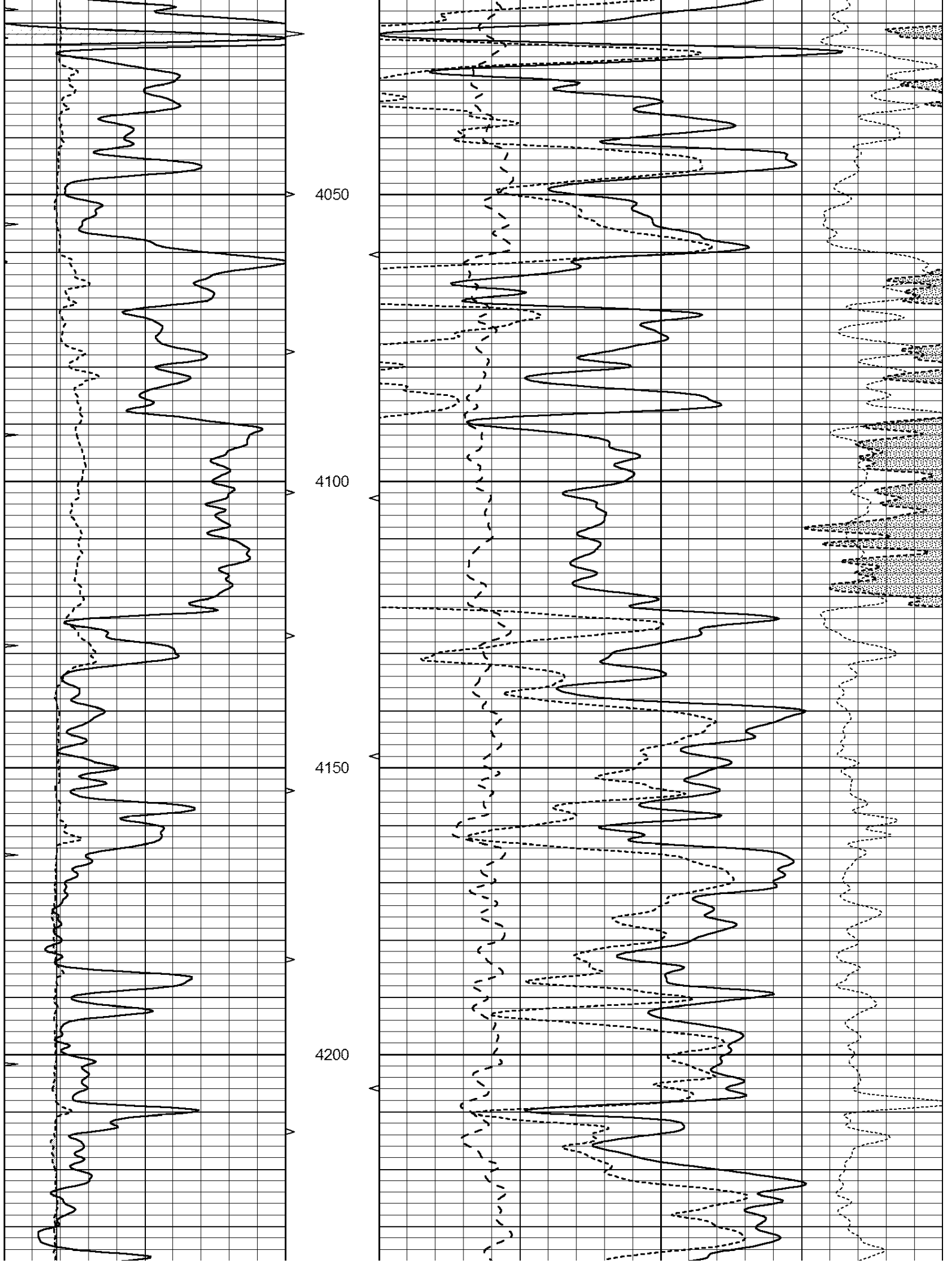


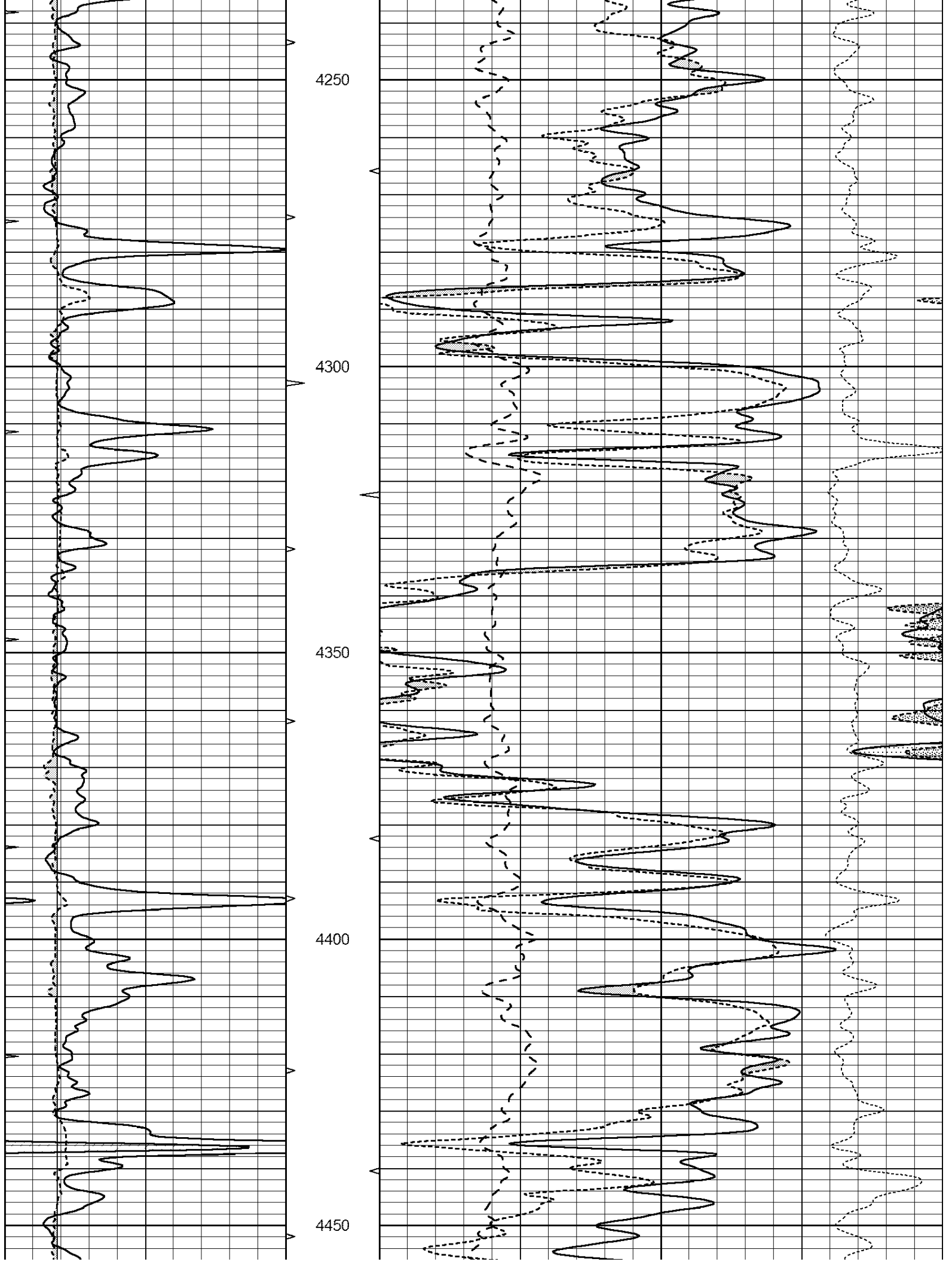


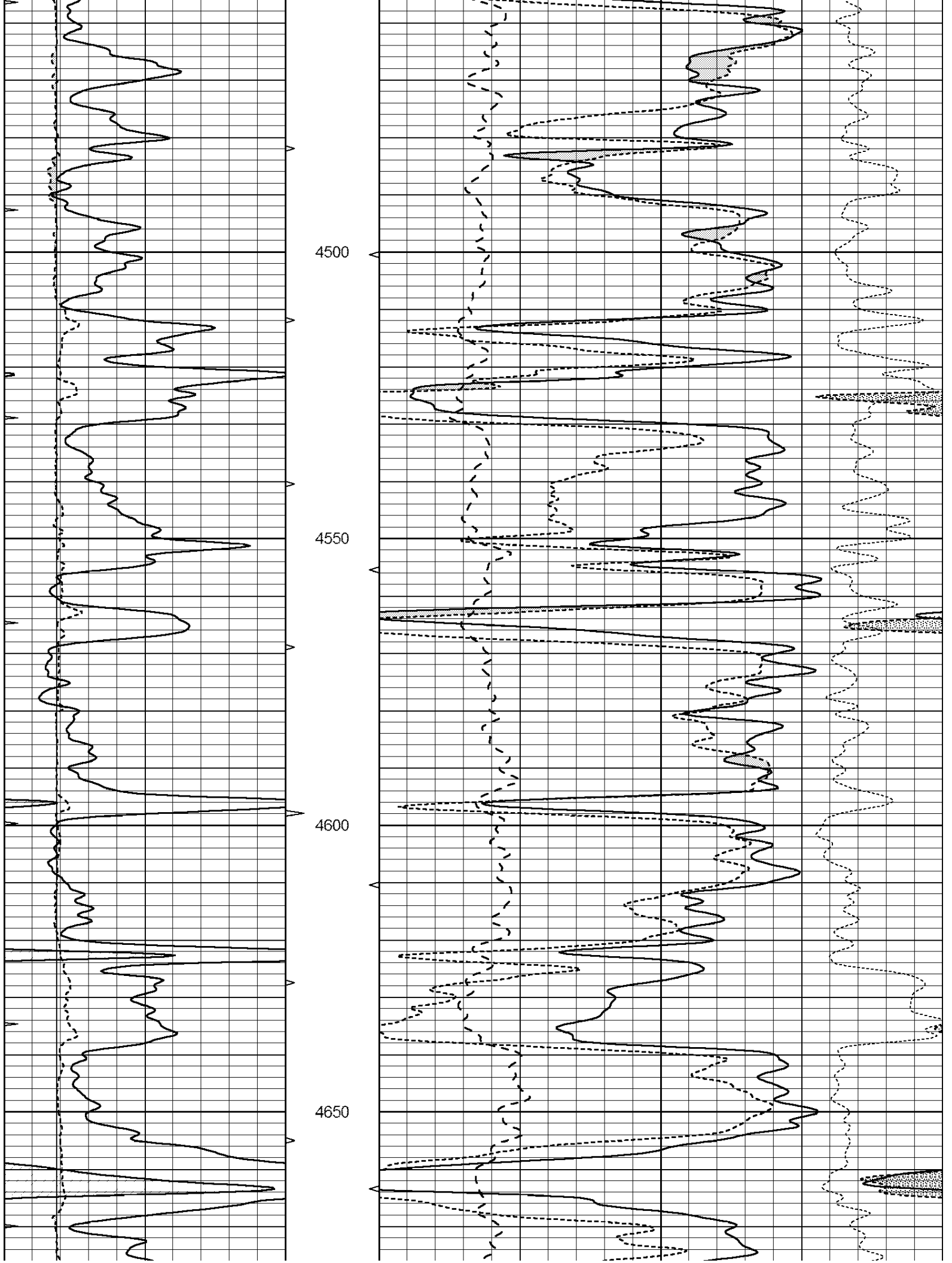


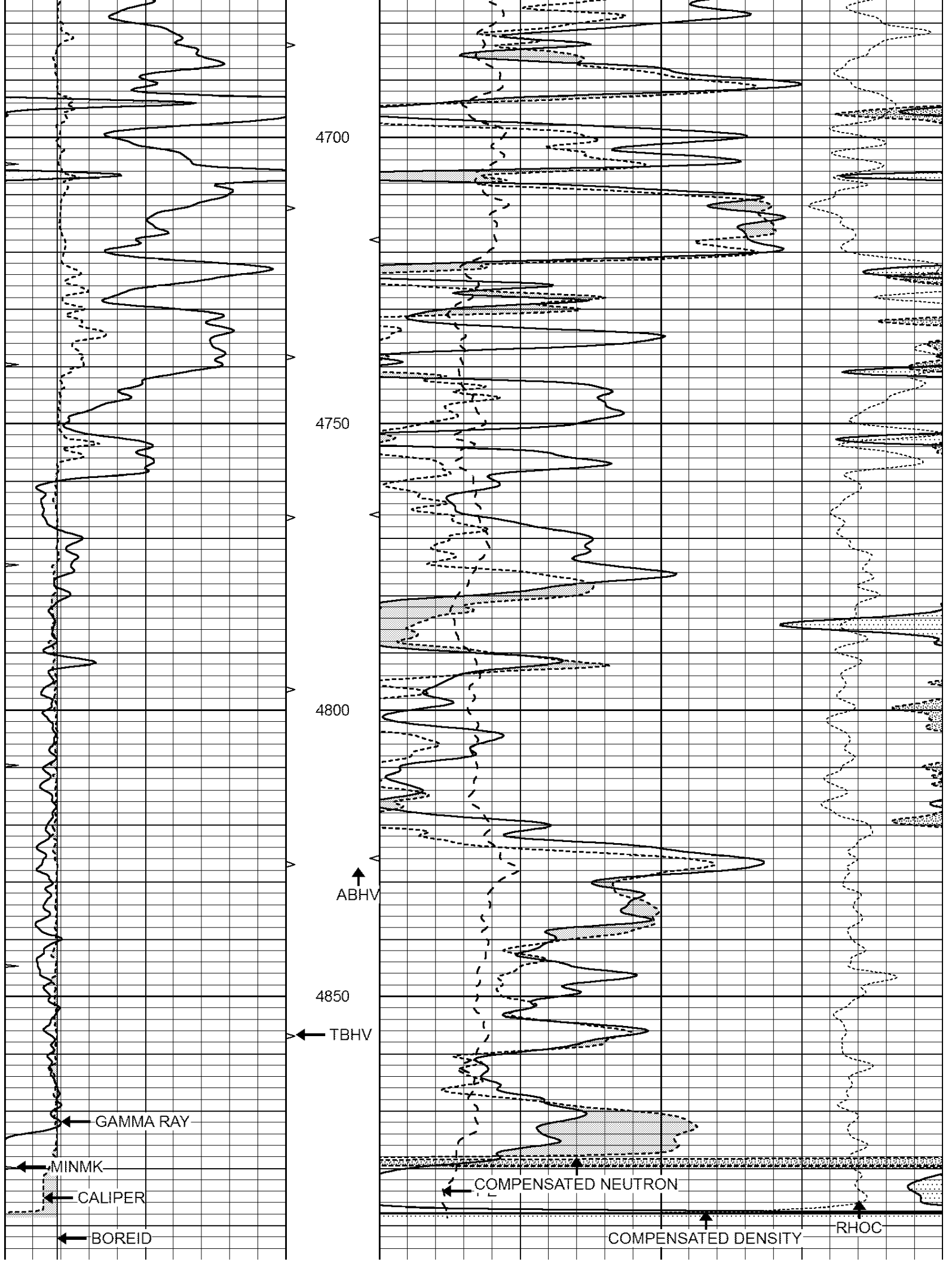




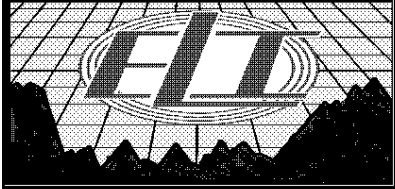








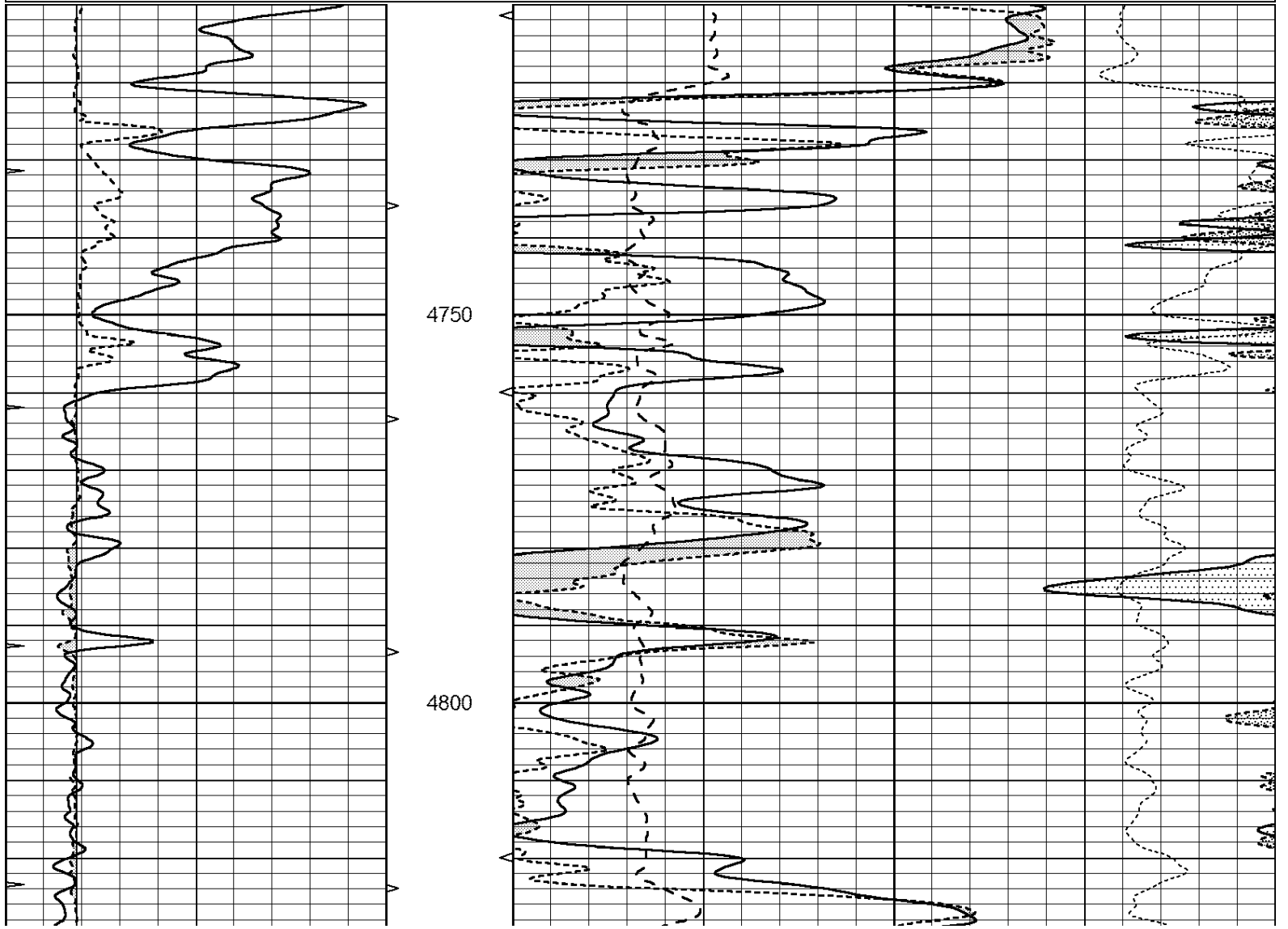
			4900 LDT 4904	LIMESTONE MATRIX 2.71					
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					

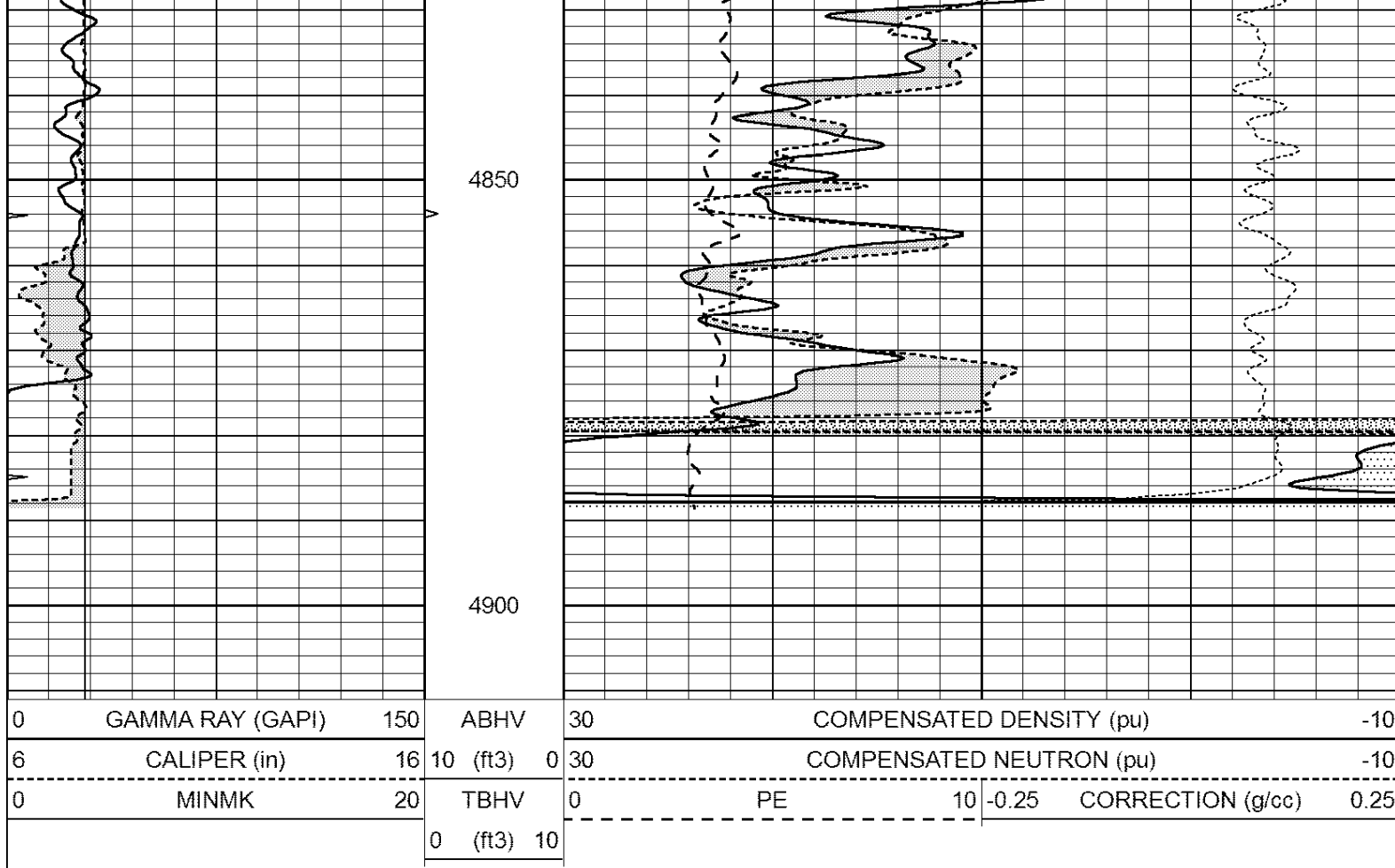


# REPEAT SECTION

Database File: 2105pe.db  
 Dataset Pathname: pass2.1  
 Presentation Format: \_ldt\_neu  
 Dataset Creation: Tue Oct 31 12:20:22 2017 by Calc Open-Cased 090629  
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)			-10	
6	CALIPER (in)	16	10 (ft3)	0	30	COMPENSATED NEUTRON (pu)			-10
0	MINMK	20	TBHV	0	PE	10	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10					





### Calibration Report

Database File: pe2.db  
 Dataset Pathname: pass2  
 Dataset Creation: Mon Aug 21 11:58:02 2017 by Log Open-Cased 090629

### Dual Induction Calibration Report

Serial-Model: PROBE8-DILG  
 Surface Cal Performed: Mon Aug 21 11:58:18 2017  
 Downhole Cal Performed: Mon Aug 21 11:58:21 2017  
 After Survey Verification Performed: Mon Aug 21 11:58:23 2017

#### Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop	V	Air	Loop	mmho/m	m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

#### Downhole Calibration

	Readings			References			Results	
	Zero	Cal	V	Zero	Cal	mmho/m	m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	mmho-m		

After Survey Verification		Readings		Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	0.000	0.000
LL3		1.000	Ohm-m		1.000	Ohm-m		
		0.000	Ohm-m		0.000	Ohm-m		
		1.000	mmho-m		1.000	mmho-m		

Litho Density Calibration Report  
Serial: 002 Model: PRB

Master Calibration		Performed Mon Aug 21 11:56:41 2017				
	Background	Magnesium	Aluminum	Sandstone		
Window 1	833.6	7394.2	2287.3	8111.8	cps	
Window 2	768.9	6322.3	1995.6	6800.0	cps	
Window 3	621.5	3261.9	1186.4	3380.9	cps	
Window 4	184.2	185.7	184.9	184.8	cps	
Long Space	0.0	5553.4	1226.6	6031.1	cps	
Short Space	1.2	1307.5	903.9	1387.7	cps	
Rho		1.7100	2.5900	1.3800	g/cc	
Pe		0.0000	2.5700	1.5500		
Rib Angle	: 46.3	Rib Slope	: 1.045	Density/Spine Ratio	: 0.566	
Spine Angle	: 76.3	Spine Slope	: 4.090	Spine Intercept	: -20.7	

Before Survey Verification		Performed Wed Dec 31 18:00:00 1969				
Window 1	0.0	0.0	0.0	0.0	cps	
Window 2	0.0	0.0	0.0	0.0	cps	
Window 3	0.0	0.0	0.0	0.0	cps	
Window 4	0.0	0.0	0.0	0.0	cps	
Long Space	0.0	0.0	0.0	0.0	cps	
Short Space	0.0	0.0	0.0	0.0	cps	
Measured Rho		0.0000	0.0000	0.0000	g/cc	
Measured Correction		0.0000	0.0000	0.0000	g/cc	
Measured Pe			0.0000	0.0000		

After Survey Verification		Performed Wed Dec 31 18:00:00 1969				
Window 1	0.0	0.0	0.0	0.0	cps	
Window 2	0.0	0.0	0.0	0.0	cps	
Window 3	0.0	0.0	0.0	0.0	cps	
Window 4	0.0	0.0	0.0	0.0	cps	
Long Space	0.0	0.0	0.0	0.0	cps	
Short Space	0.0	0.0	0.0	0.0	cps	
Measured Rho		0.0000	0.0000	0.0000	g/cc	
Measured Correction		0.0000	0.0000	0.0000	g/cc	
Measured Pe			0.0000	0.0000		

Compensated Neutron Calibration Report

Serial Number: 6I  
Tool Model: G

Detector		Readings		Target		Normalization
Short Space		1.00	cps	1.00	cps	1.0000
Long Space		1.00	cps	1.00	cps	1.0000
PRE-SURVEY VERIFICATION						
Detector		Readings		Measured	Target	
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		
3)	Short Space		cps			
	Long Space		cps	pu		
POST-SURVEY VERIFICATION						
Detector		Readings		Measured	Target	
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		pu
3)	Short Space		cps			
	Long Space		cps	pu		pu
Gamma Ray Calibration Report						
Serial Number:		GR6				
Tool Model:		OPEN				
Performed:		Mon Aug 21 11:59:01 2017				
Calibrator Value:		150.0	GAPI			
Background Reading:		0.0	cps			
Calibrator Reading:		276.0	cps			
Sensitivity:		0.5500	GAPI/cps			