



SUPERIOR
Hays,
Kansas

COMPENSATED DENSITY NEUTRON LOG

Company	CORTEZ HEARTLAND		
Well	SMITH #1		
Field	FREELAND		
County	PAWNEE	State	KANSAS
Location:	API # : 15-145-21591		Other Services
660' FNL & 1980' FEL		DIL	
SEC 5 TWP 21S RGE 19W		Elevation	
Permanent Datum	GROUND LEVEL	Elevation	2160
Log Measured From	KELLY BUSHING 13' A.G.L.	K.B. 2173	D.F.
Drilling Measured From	KELLY BUSHING	G.L. 2160	

Date	9-18-09		
Run Number	ONE		
Depth Driller	4400		
Depth Logger	4392		
Bottom Logged Interval	4368		
Top Log Interval	2200		
Casing Driller	435		
Casing Logger	NA		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4 / 42		
pH / Fluid Loss	8.0 / 17.6		
Source of Sample	FLOWLINE		
Rim @ Meas. Temp	0.44 @ 91F		
Rinf @ Meas. Temp	0.33 @ 91F		
Rmc @ Meas. Temp	0.53 @ 91F		
Source of Rinf / Rmc	MEASURED		
Rim @ BHT	.340 @ 119F		
Time Circulation Stopped	3 HOURS		
Time Logger on Bottom	2:00 A.M.		
Maximum Recorded Temperature	119F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	RUPP		
Witnessed By	JAKE ENGEL		

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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

SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: ROZEL, & 280TH AVE, 4 1/2N , 1 1/2W, S INTO.

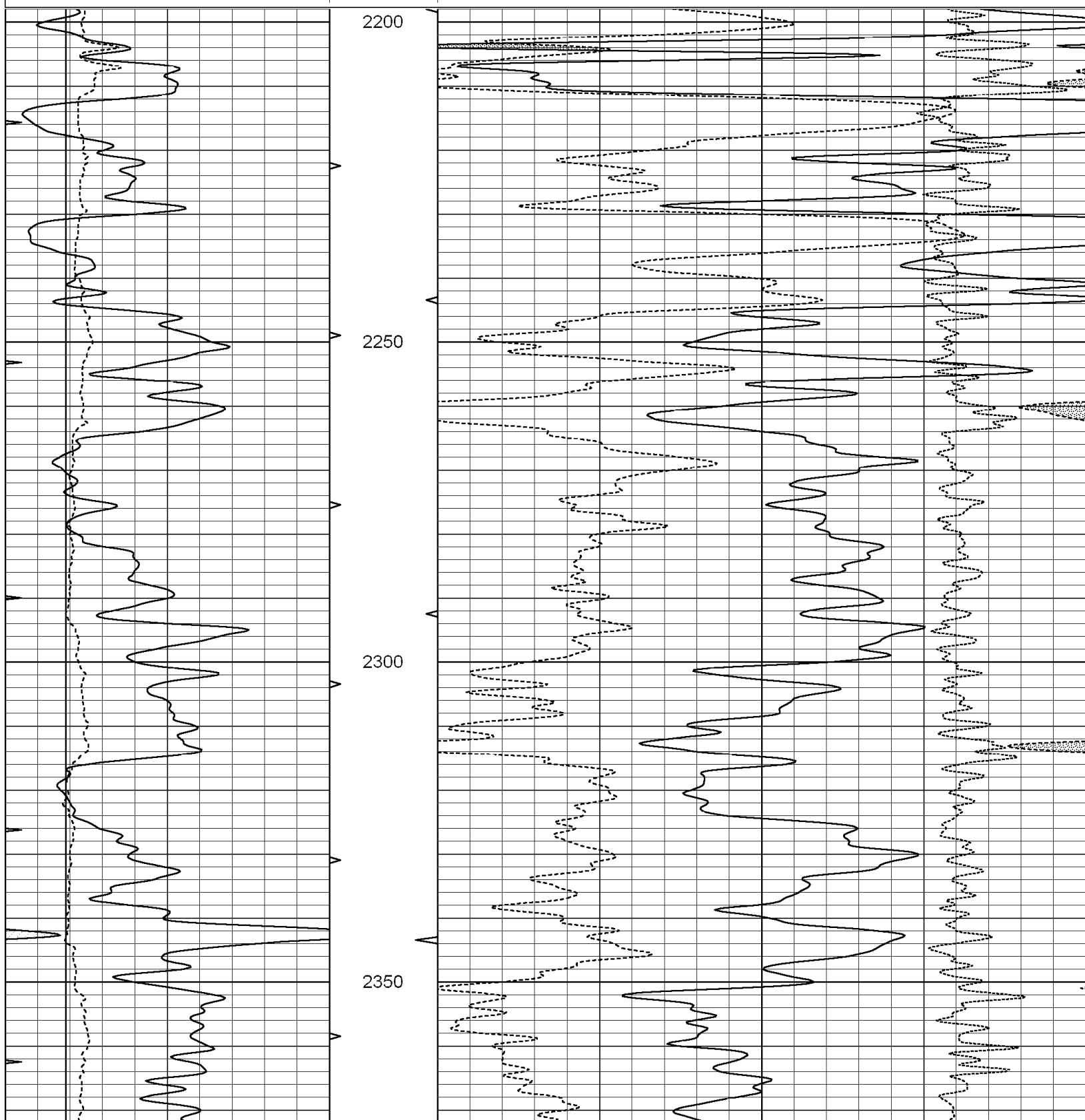


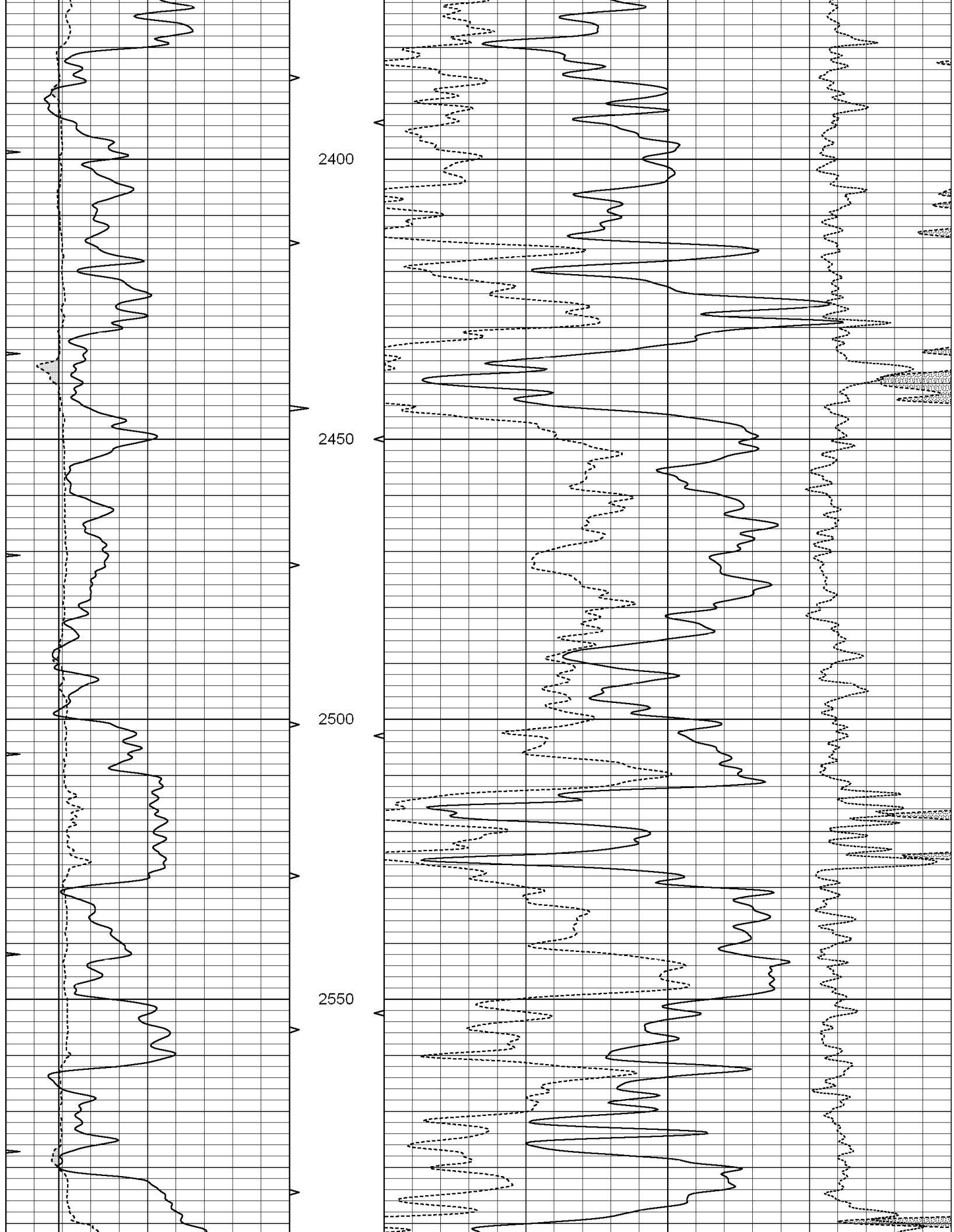
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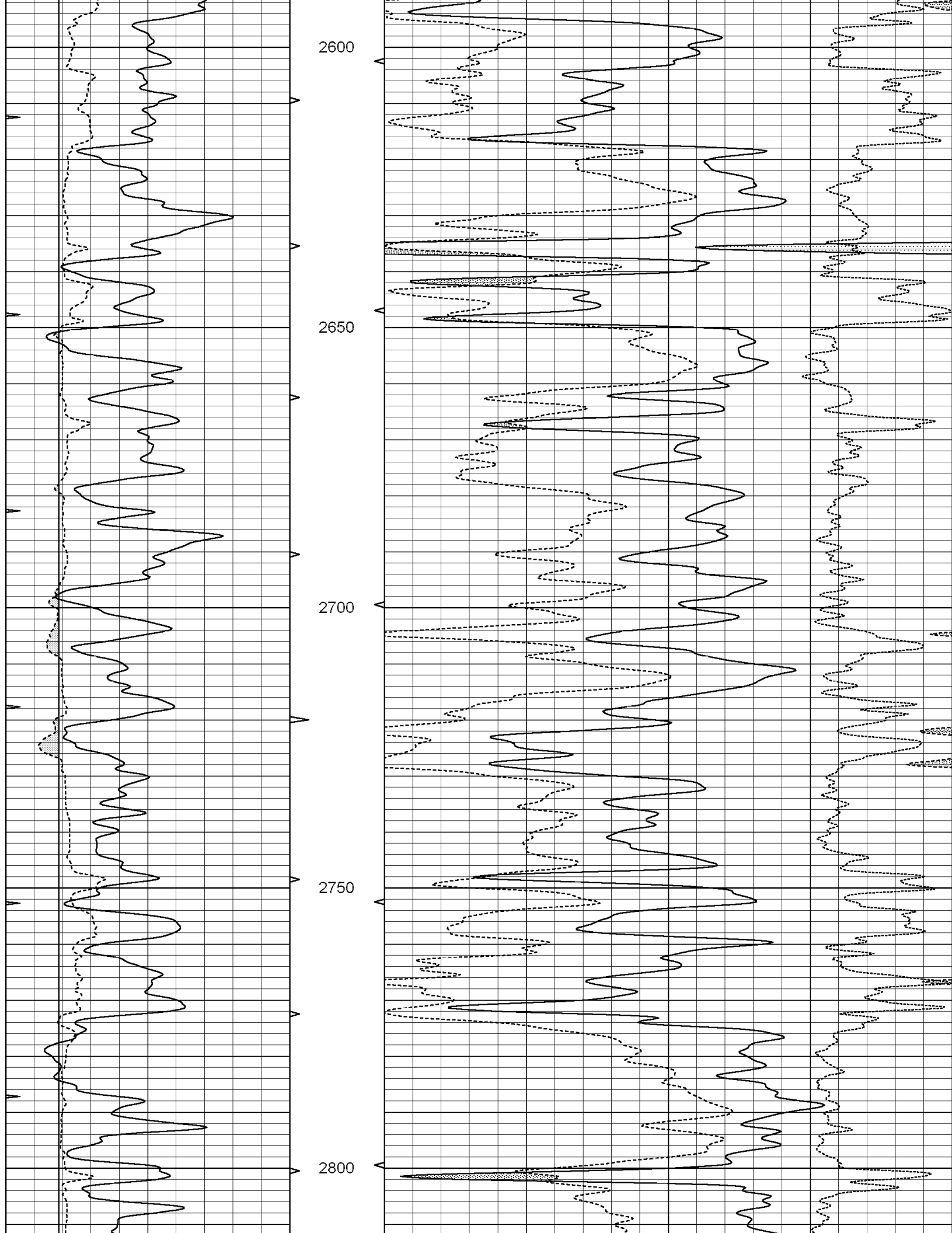
MAIN SECTION

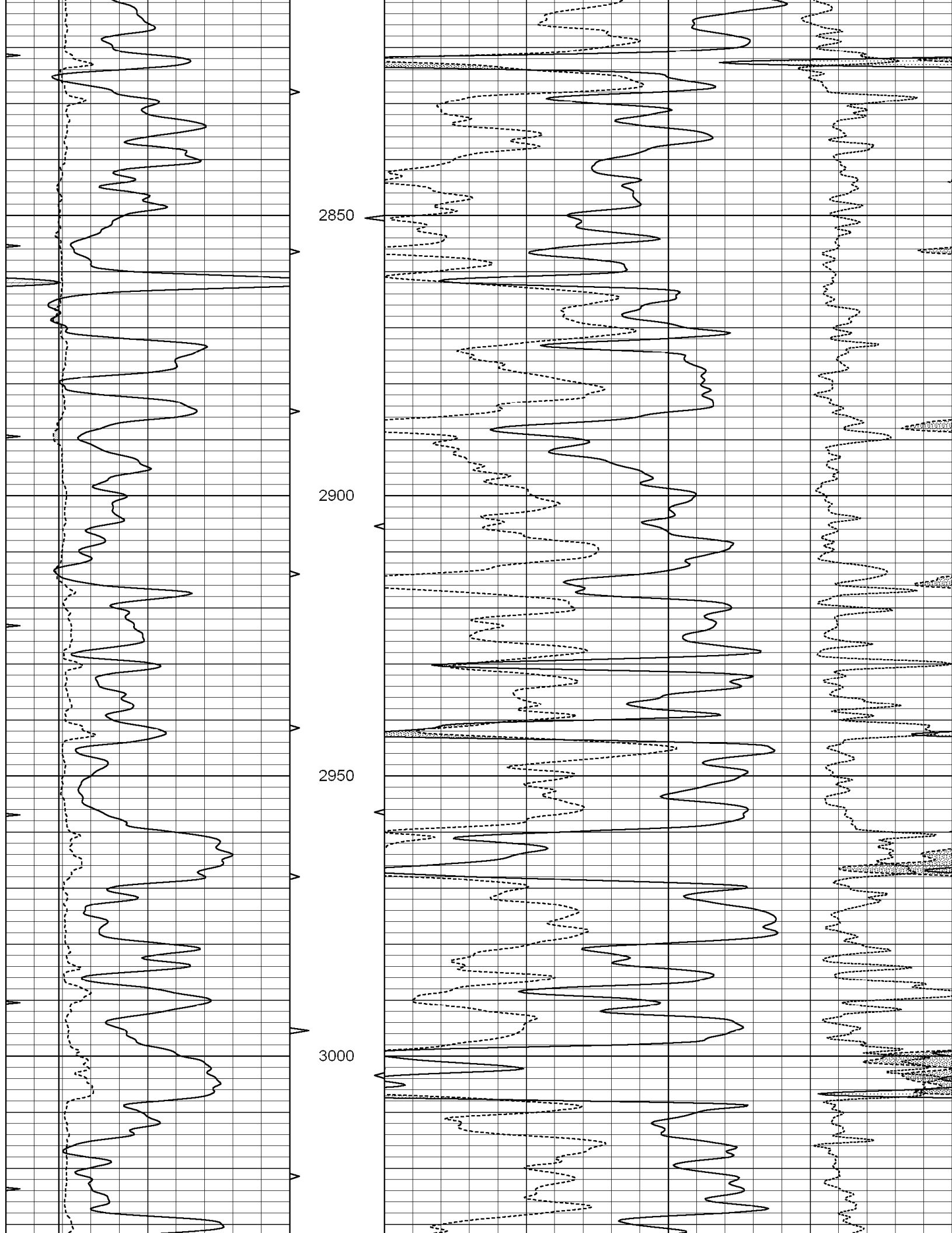
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Dataset Pathname: pass4.1
Presentation Format: den_neu
Dataset Creation: Sat Sep 19 03:54:08 2009 by Calc Open-Cased 051020
Charted by: Depth in Feet scaled 1:240

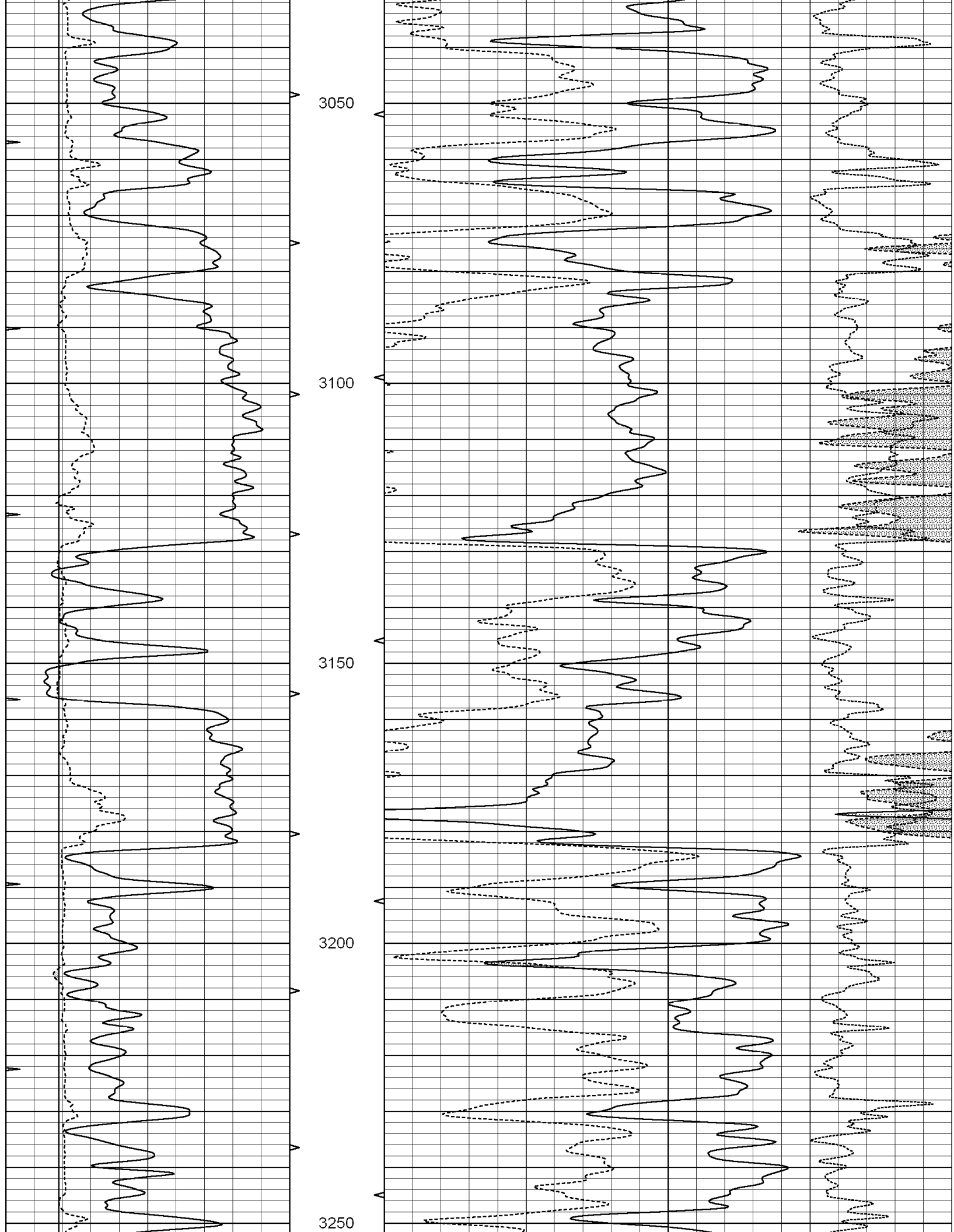
0	GAMMA RAY (GAPI)	150	ABHV	30	COMPENSATED DENSITY (pu)	-10
6	CALIPER (in)	16	10 (ft3) 0	30	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV		-0.25 CORRECTION (g/cc)	0.25
			0 (ft3) 10			

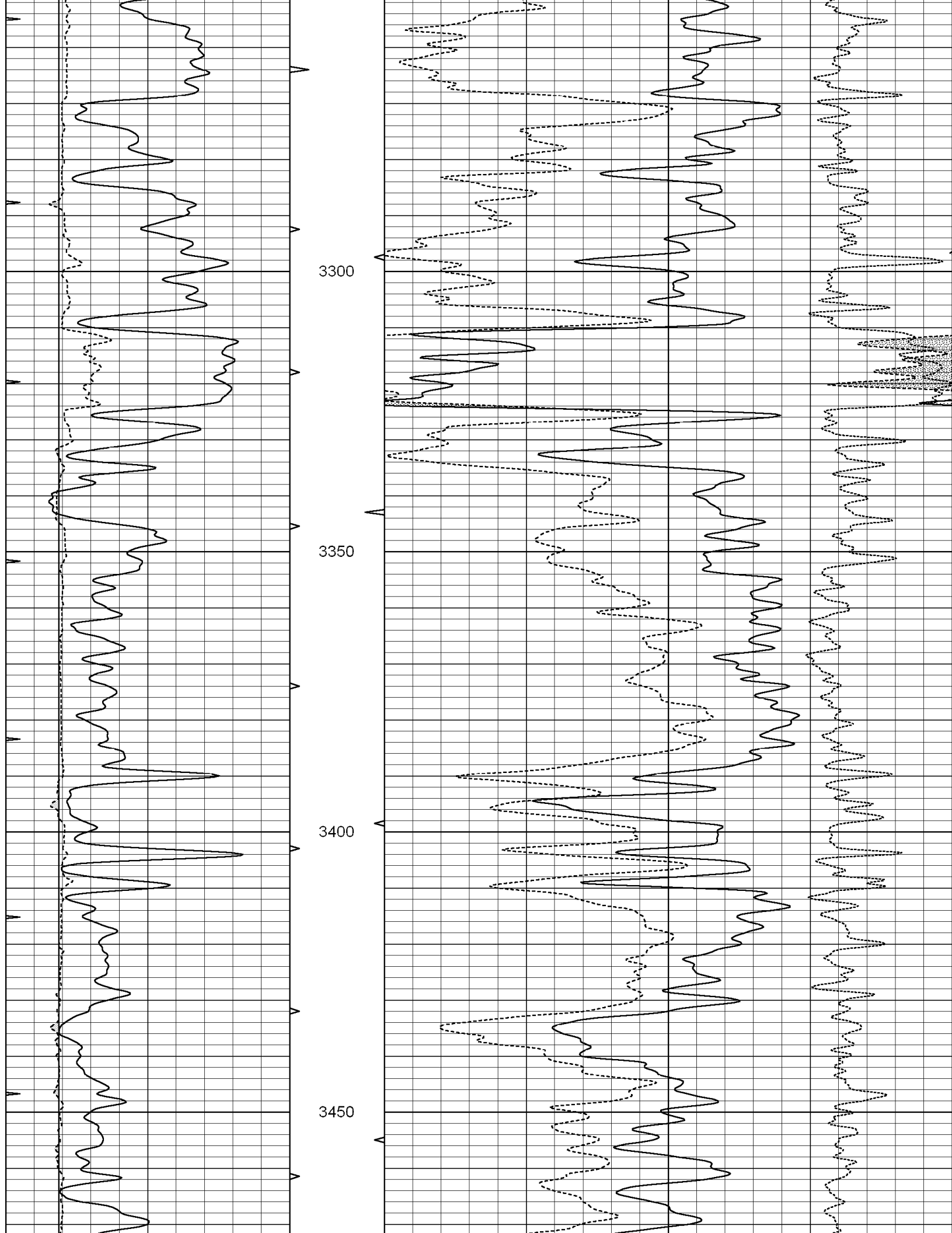


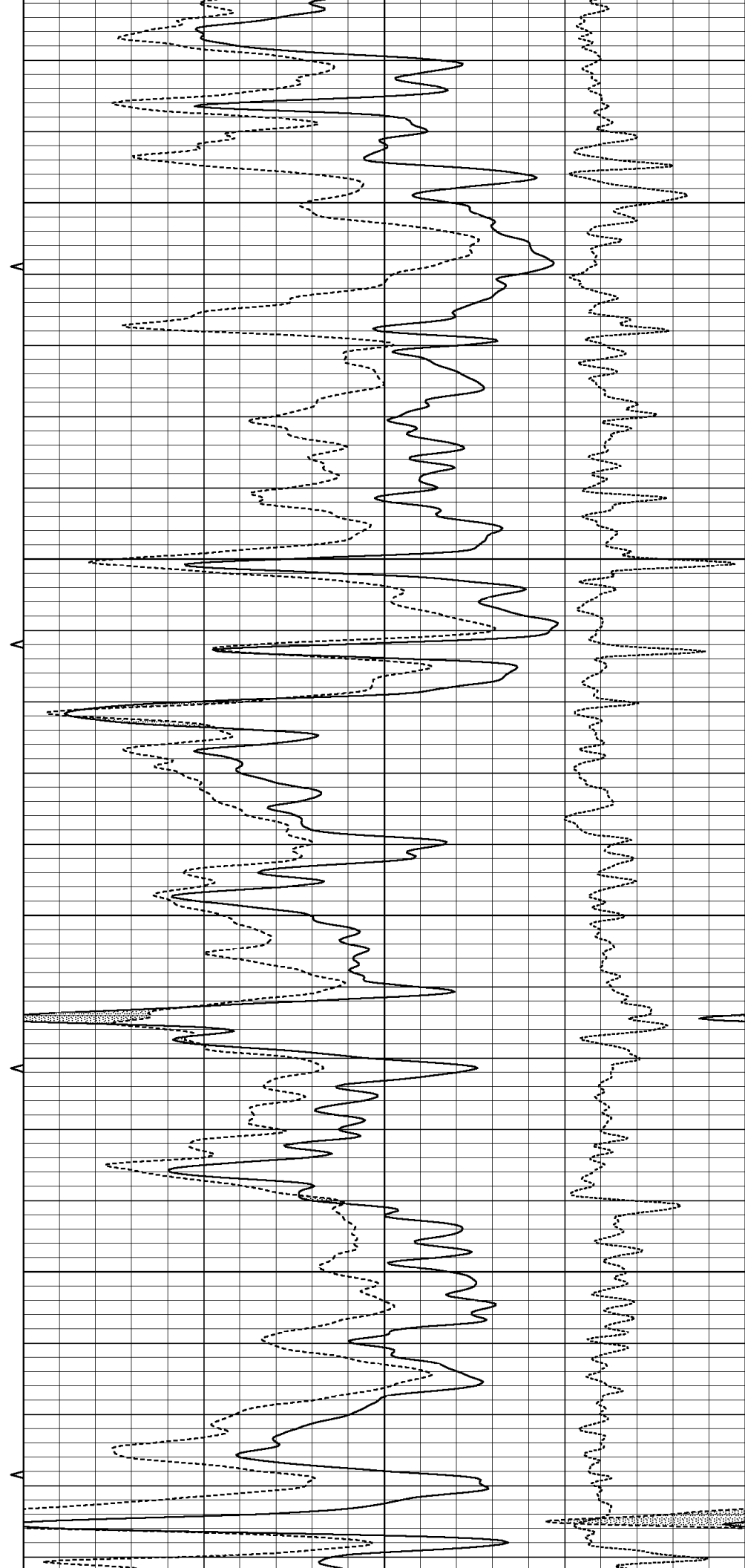
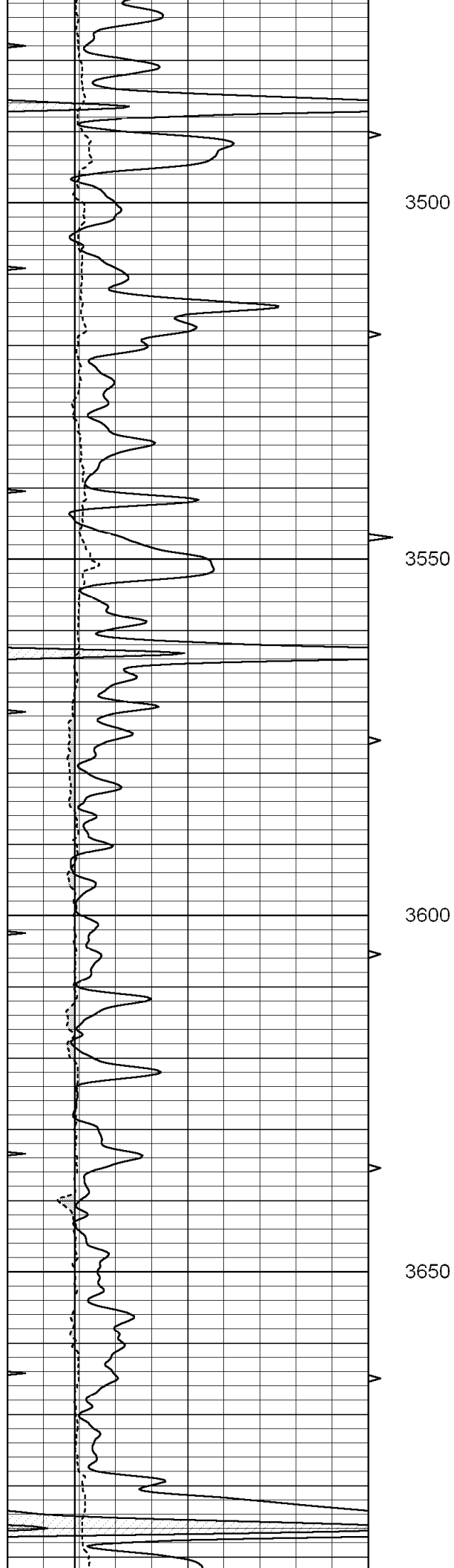


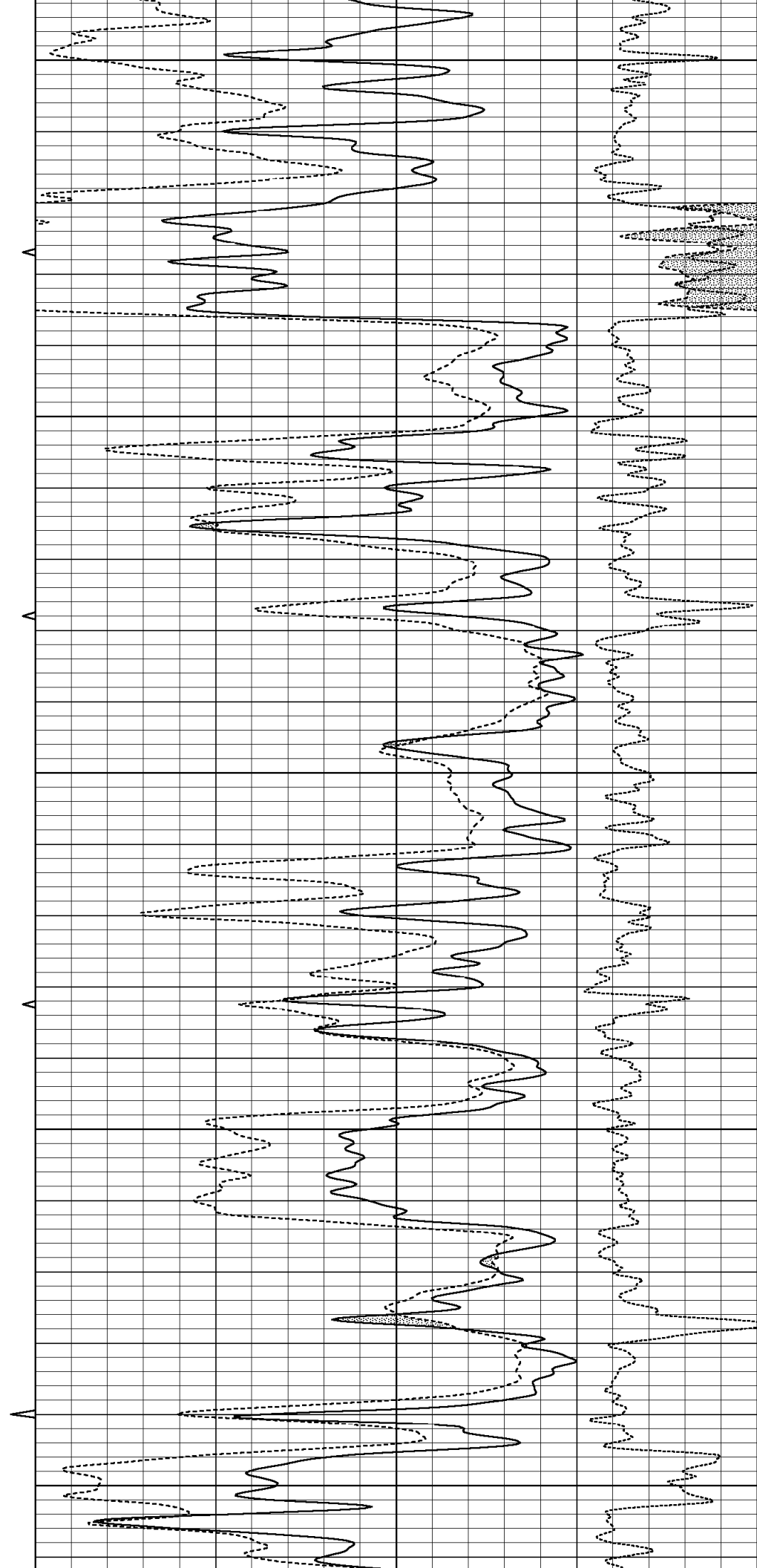
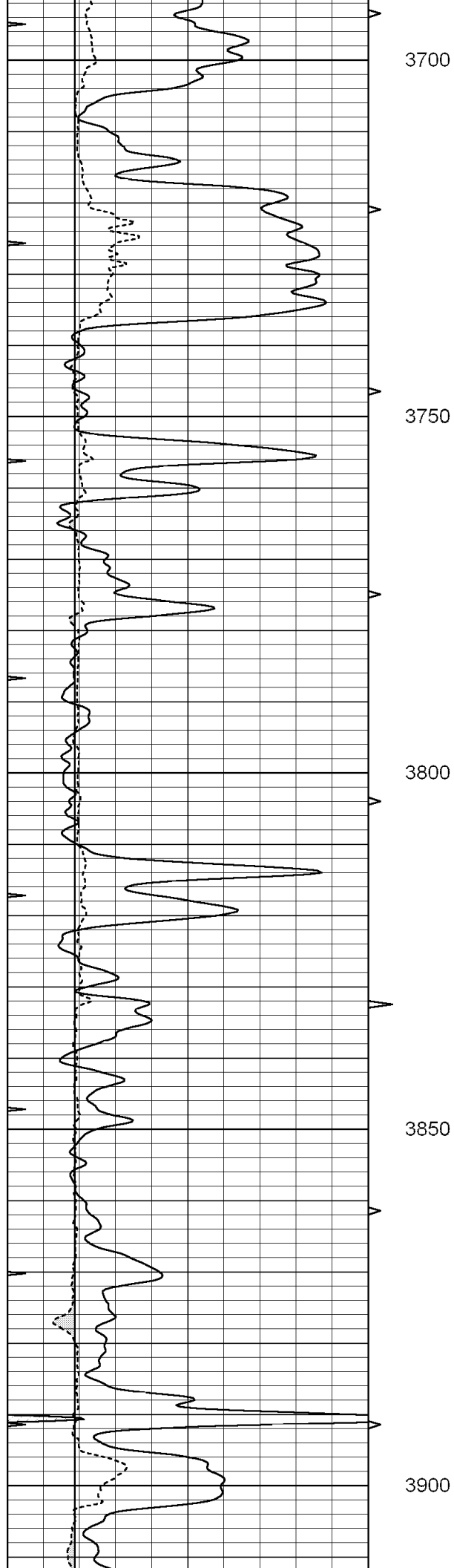


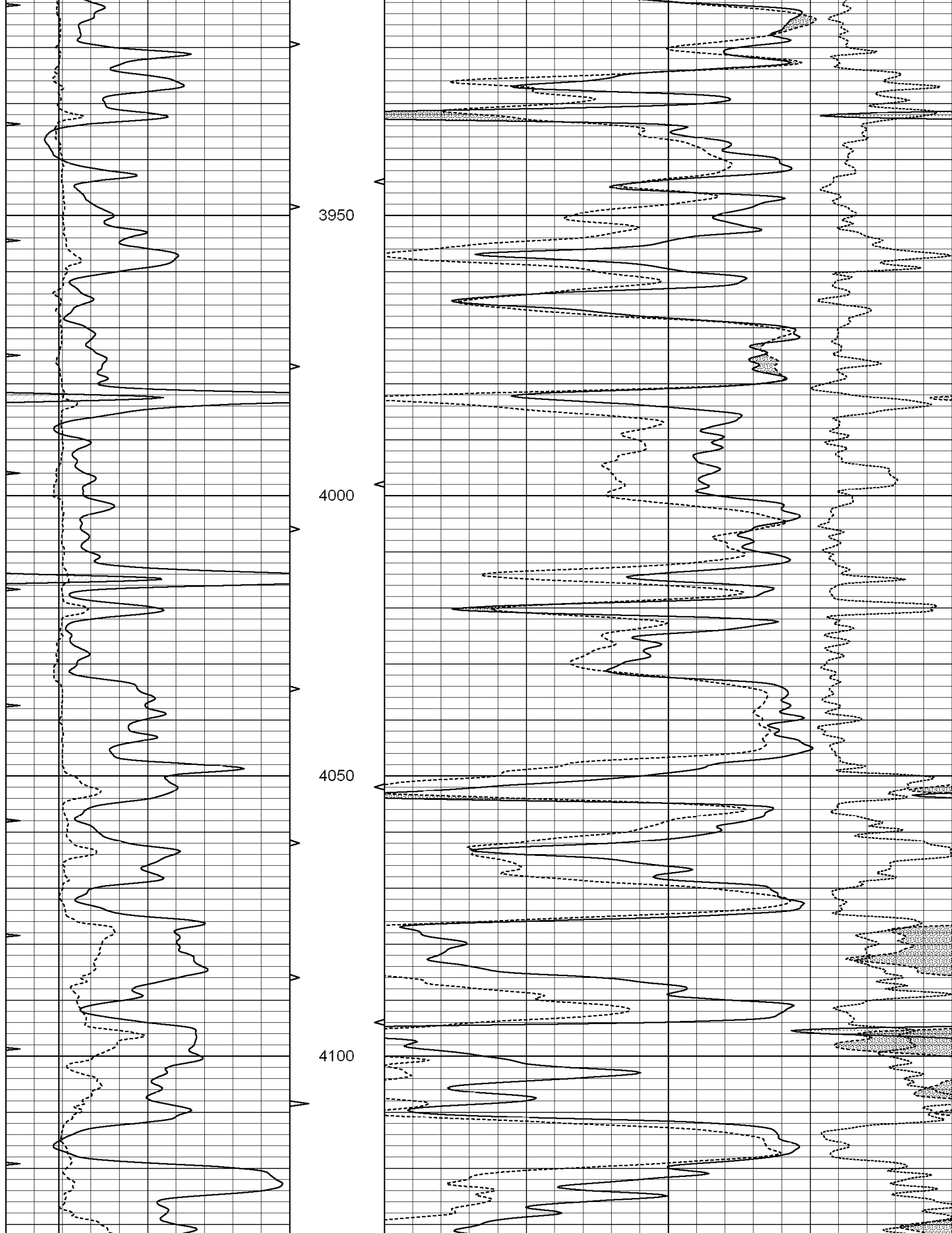


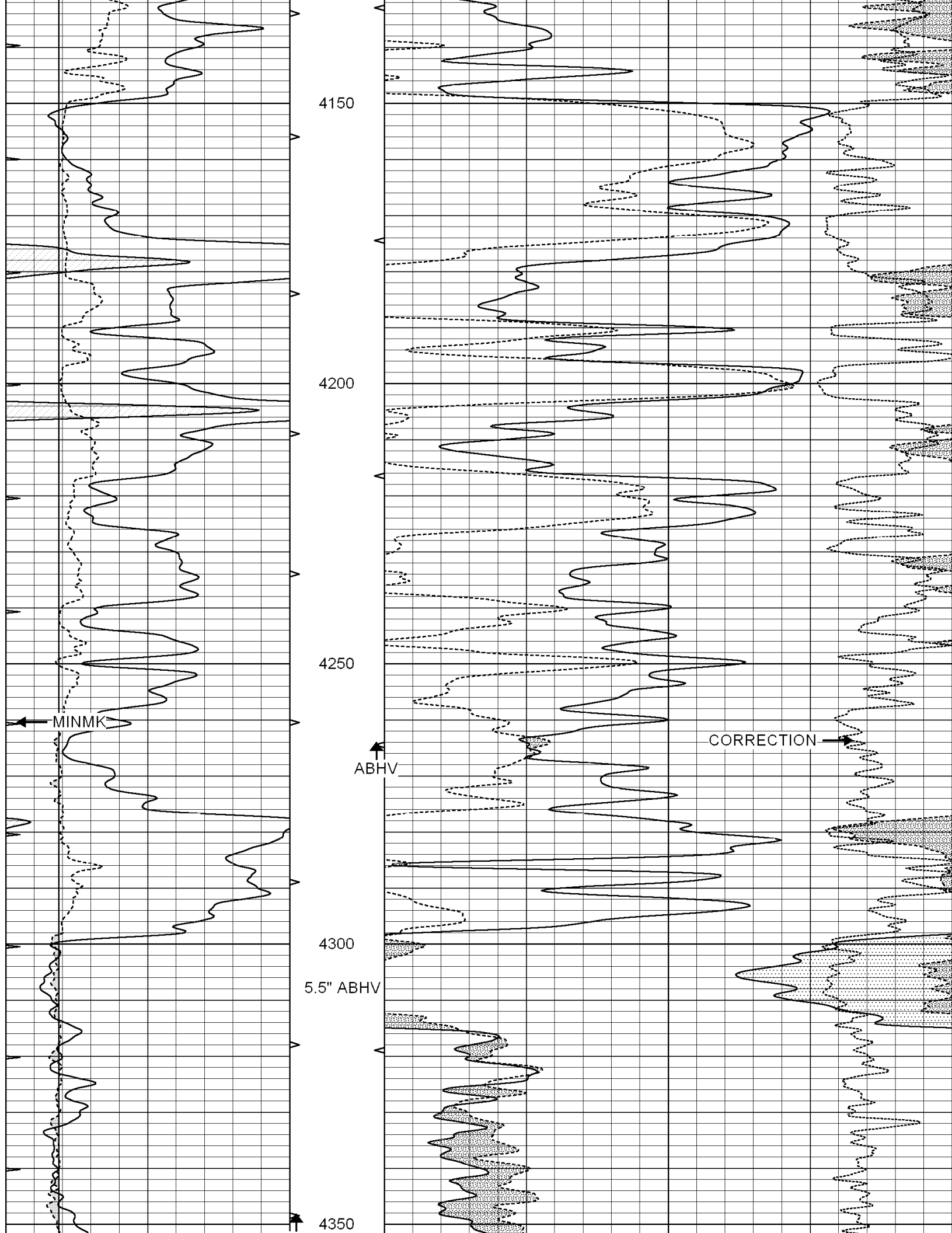


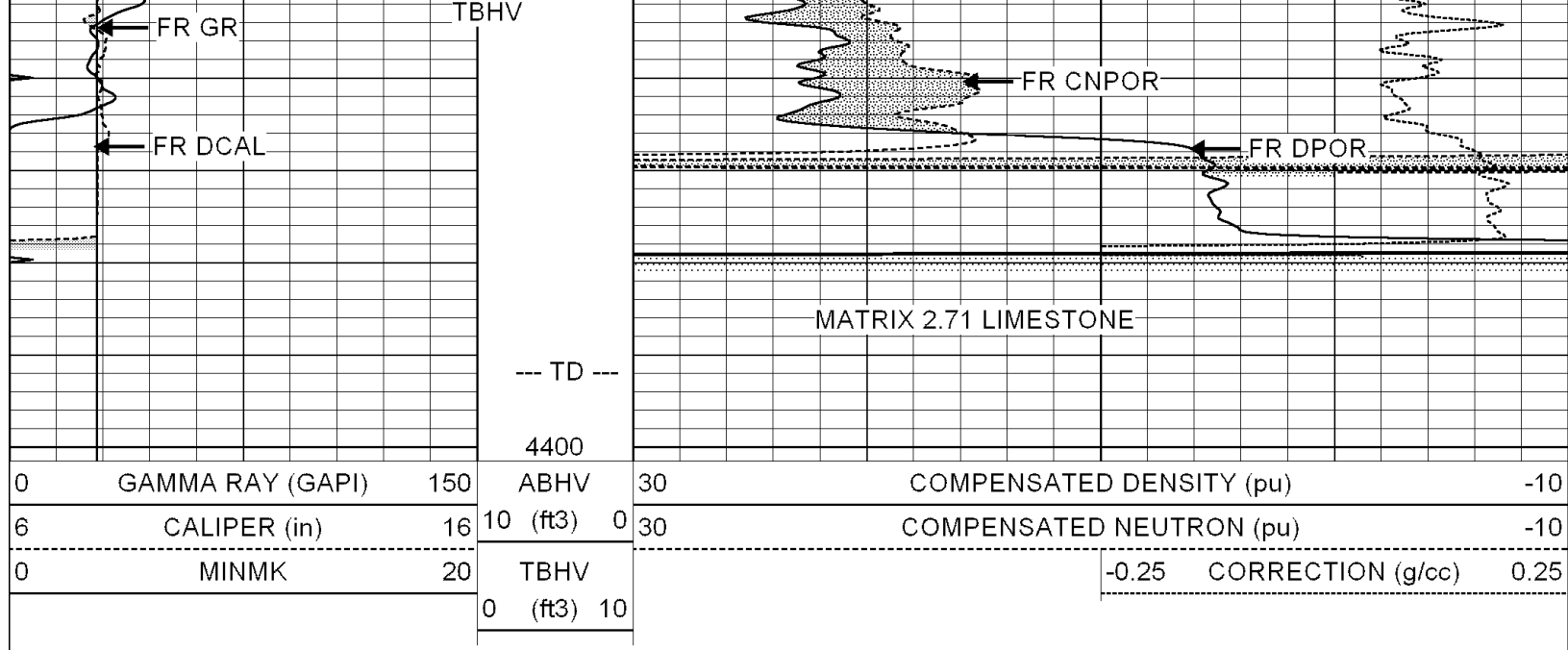










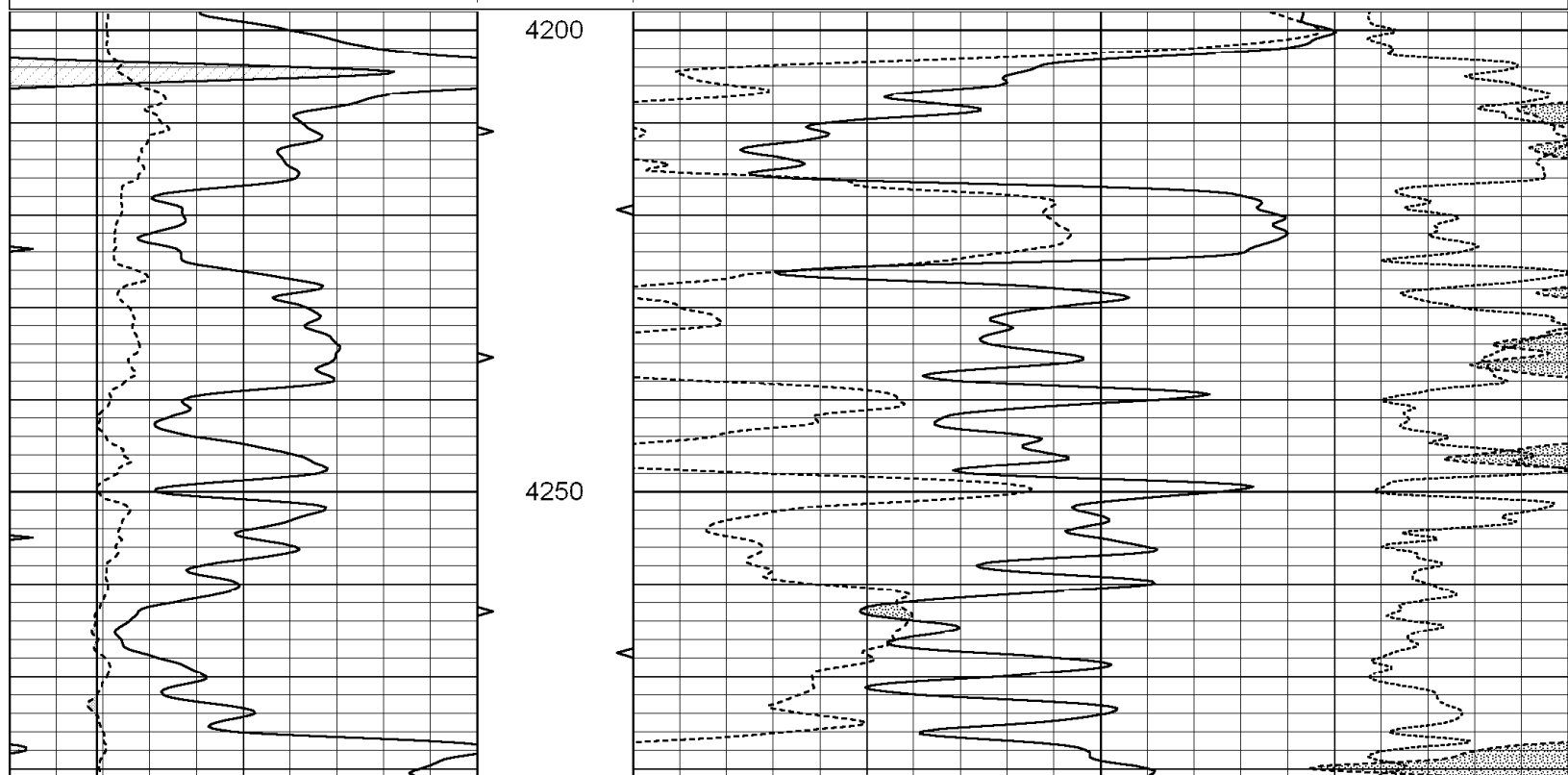


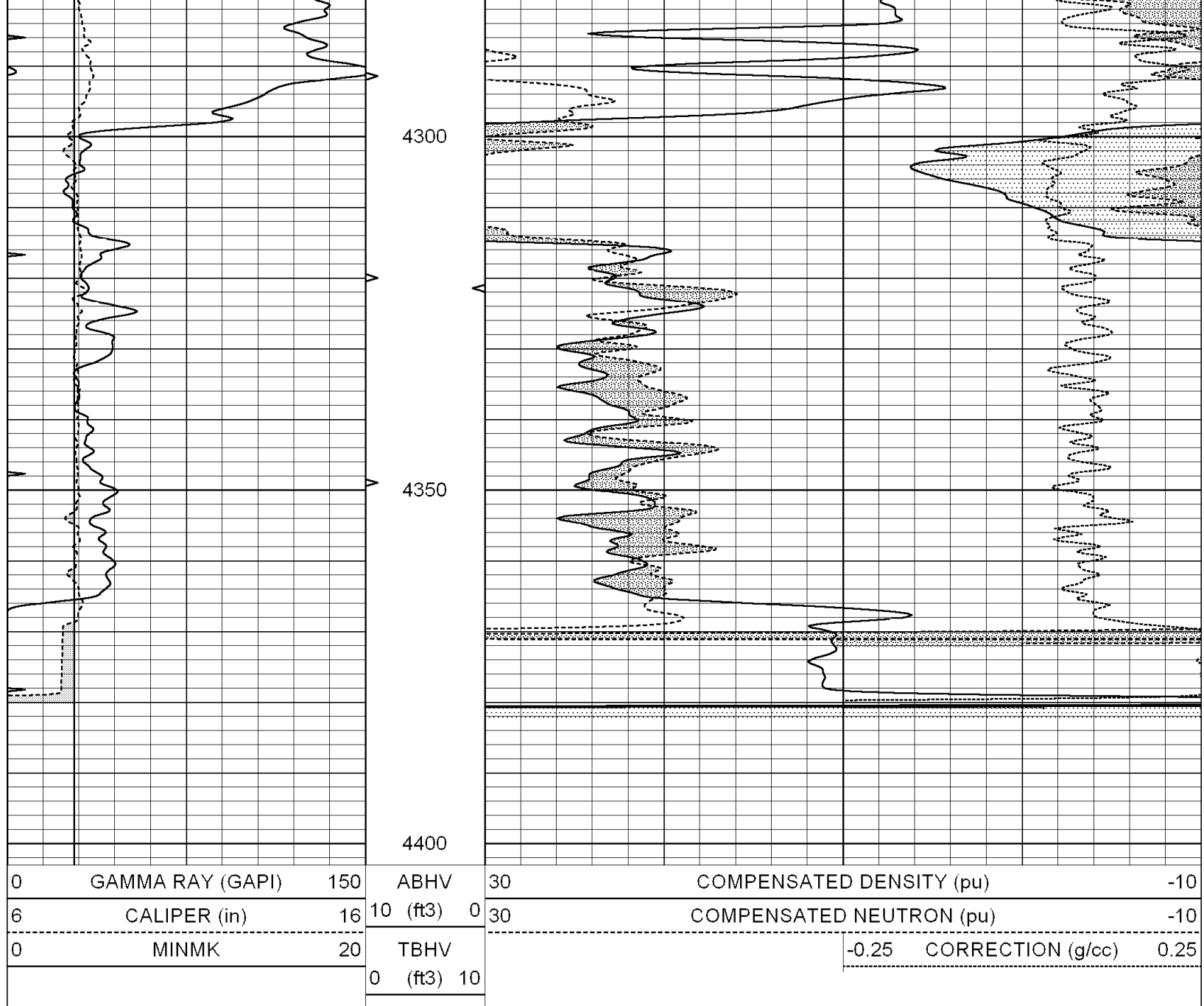
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REPEAT SECTION

Database File: 004256ddn.db
 Dataset Pathname: pass2.A
 Presentation Format: den_neu
 Dataset Creation: Sat Sep 19 04:23:52 2009 by Calc Open-Cased 051020
 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	COMPENSATED NEUTRON (pu)	-10
0	MINMK	20	TBHV	-0.25	CORRECTION (g/cc)	0.25
			0 (ft3)	10		





Calibration Report

Database File: 004256ddn.db
 Dataset Pathname: pass4.1
 Dataset Creation: Sat Sep 19 03:54:08 2009 by Calc Open-Cased 051020

Dual Induction Calibration Report

Serial-Model:
 Performed:

DIL5-GEAR
 Sat Sep 19 02:35:52 2009

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.004	0.654	V	0.000	400.000	mmho-m	490.000	-6.000
Medium	-0.005	0.737	V	0.000	462.500	mmho-m	470.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.006	0.655	V	0.000	400.000	mmho-m	615.668	-3.483
Medium	0.010	0.747	V	0.000	462.500	mmho-m	627.607	-6.064

Compensated Density Calibration Report

Serial-Model:	GEAR1-GEARHART
Source / Verifier:	147 / 147
Master Calibration Performed:	Sat Sep 19 01:15:17 2009

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1006.91	528.07	cps
Aluminum	2.610	g/cc	233.49	355.80	cps
Spine Angle = 74.88			Density/Spine Ratio = 0.594		
	Size		Reading		
Small Ring	8.20	in	3.68	V	
Large Ring	14.00	in	6.06	V	

Compensated Neutron Calibration Report

Serial Number:	NEU_11
Tool Model:	G

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	1.00	cps	1.00	cps	1.0000
Long Space	1.00	cps	1.00	cps	1.0000

Gamma Ray Calibration Report

Serial Number:	GR5	
Tool Model:	OPEN	
Performed:	Thu Sep 17 08:10:47 2009	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5500	GAPI/cps