Casedhole Solutions

COMPENSATED DENSITY / NEUTRON LOG

Company	RITCHIE EXPLORATION, INC.
Well	WING TRUST 23D #1
Field	WING
County	LOGAN
State	KANSAS

Company RITCHIE EXPLORATION, INC.

Well WING TRUST 23D #1

Field WING

County LOGAN State KANSAS

Location: API # : 15-109-21455-0000

1830' FSL & 2200' FEL

SEC 23 TWP 15S RGE 36W

Permanent Datum	GROUND LEVEL	Elevation 3253	Other Services
Log Measured From	KELLY BUSHING 5' A.G.L.		DIL/MEL
Drilling Measured From	KELLY BUSHING		Elevation
			K.B. 3258
			D.F. 3256
			G.L. 3253

Date	3/1/16		
Run Number	ONE		
Depth Driller	5210		
Depth Logger	5212		
Bottom Logged Interval	5188		
Top Log Interval	3600		
Casing Driller	8 5/8"@250'		
Casing Logger	250		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 8,000 PPM	
Density / Viscosity	9.2/71		
pH / Fluid Loss	10.5/7.2		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.500@72F		
Rmf @ Meas. Temp	.375@72F		
Rmc @ Meas. Temp	.600@72F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.284@127F		
Time Circulation Stopped	2.5 HOURS		
Time Logger on Bottom	4:00 A.M.		
Maximum Recorded Temperature	127F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	JOHN GOLDSMITH		

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Comments

THANK YOU FOR USING (C & J ENERY/ CASEDHOLE SOLUTIONS) HAYS, KANSAS (785) 628-6395

DIRECTIONS

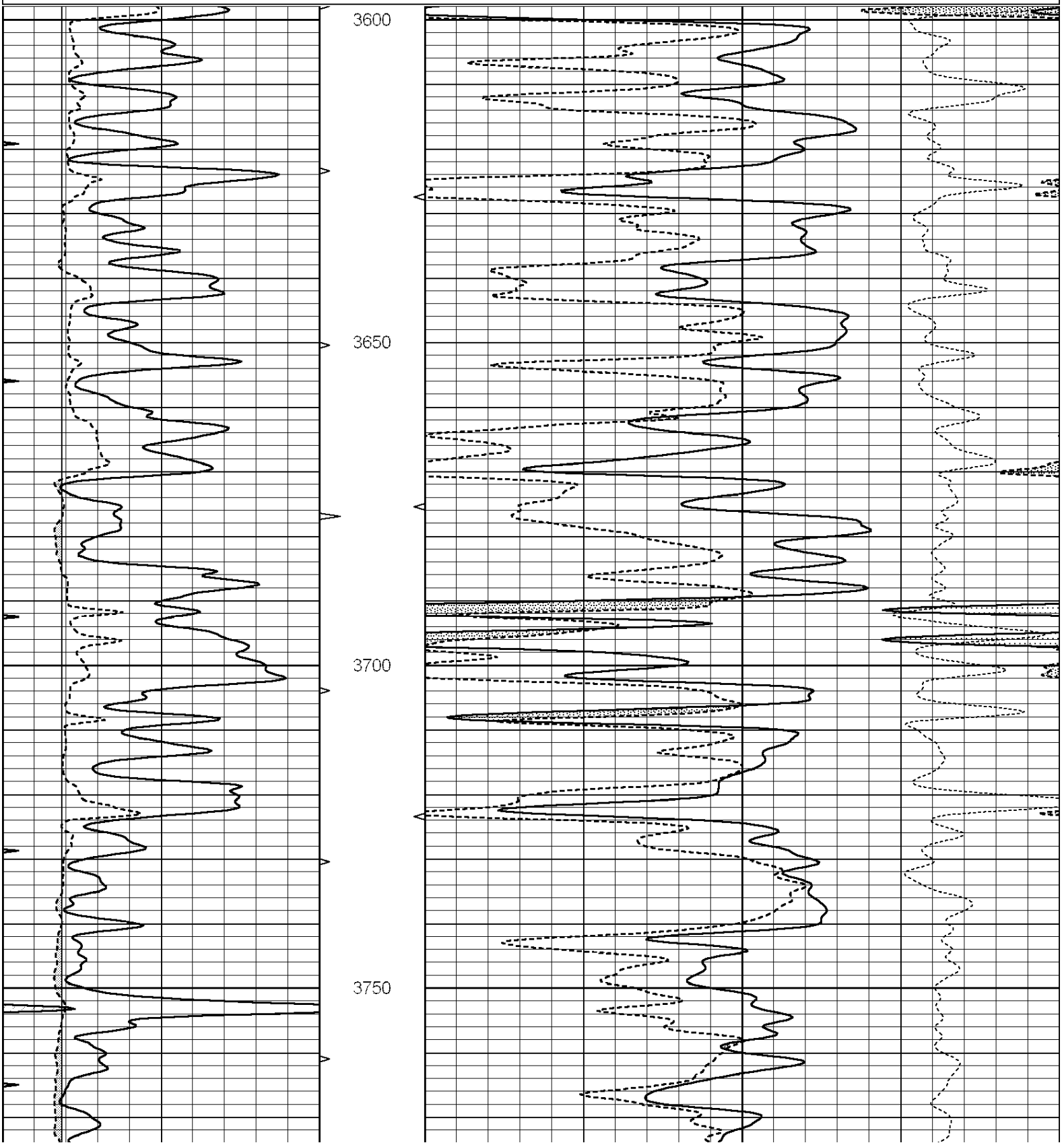
RUSSELL SPRINGS, KS., S. ON HWY 25 TO "DAKOTA RD.". 4 1/2E., S. INTO

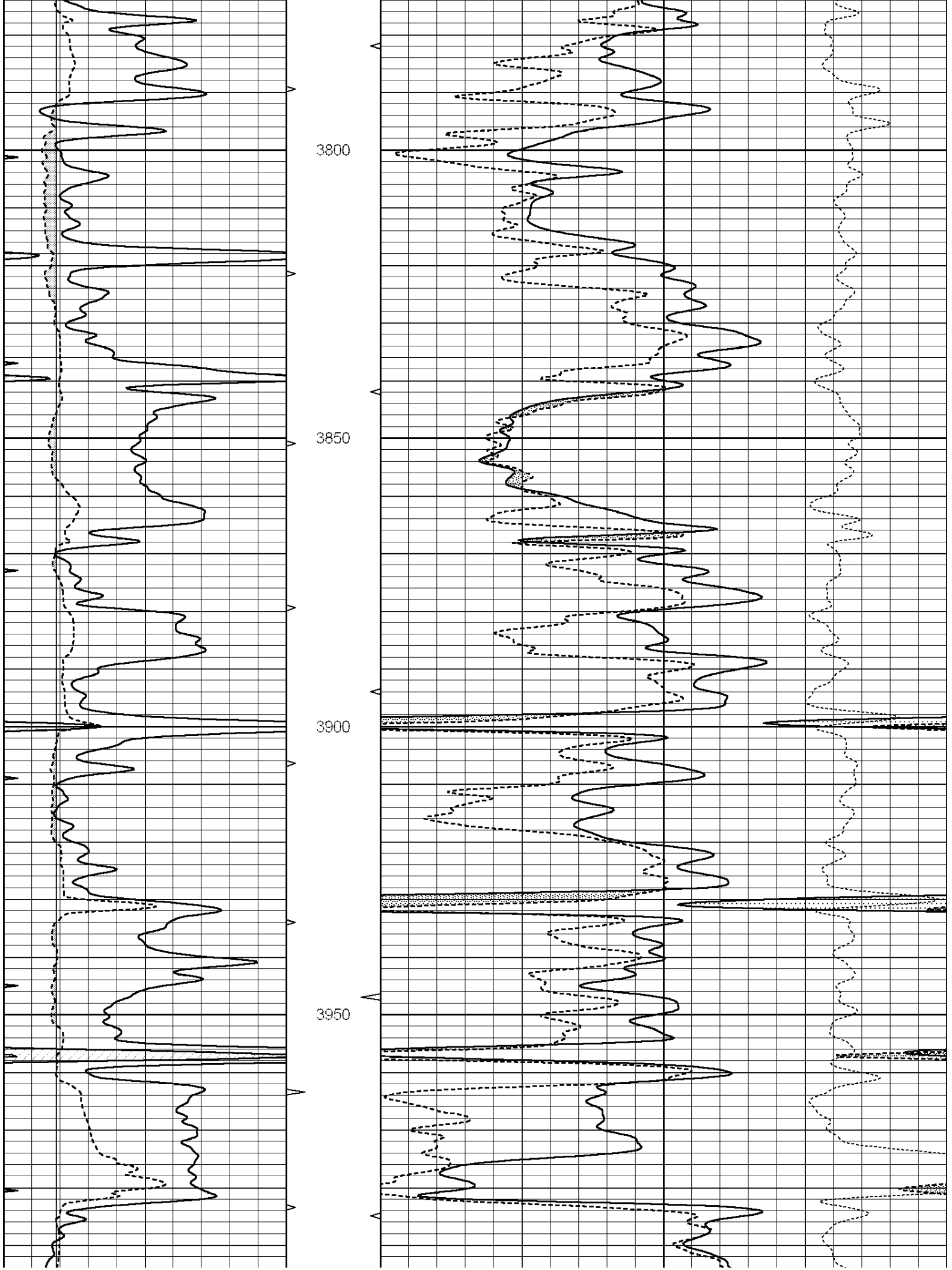
Casedhole Solutions

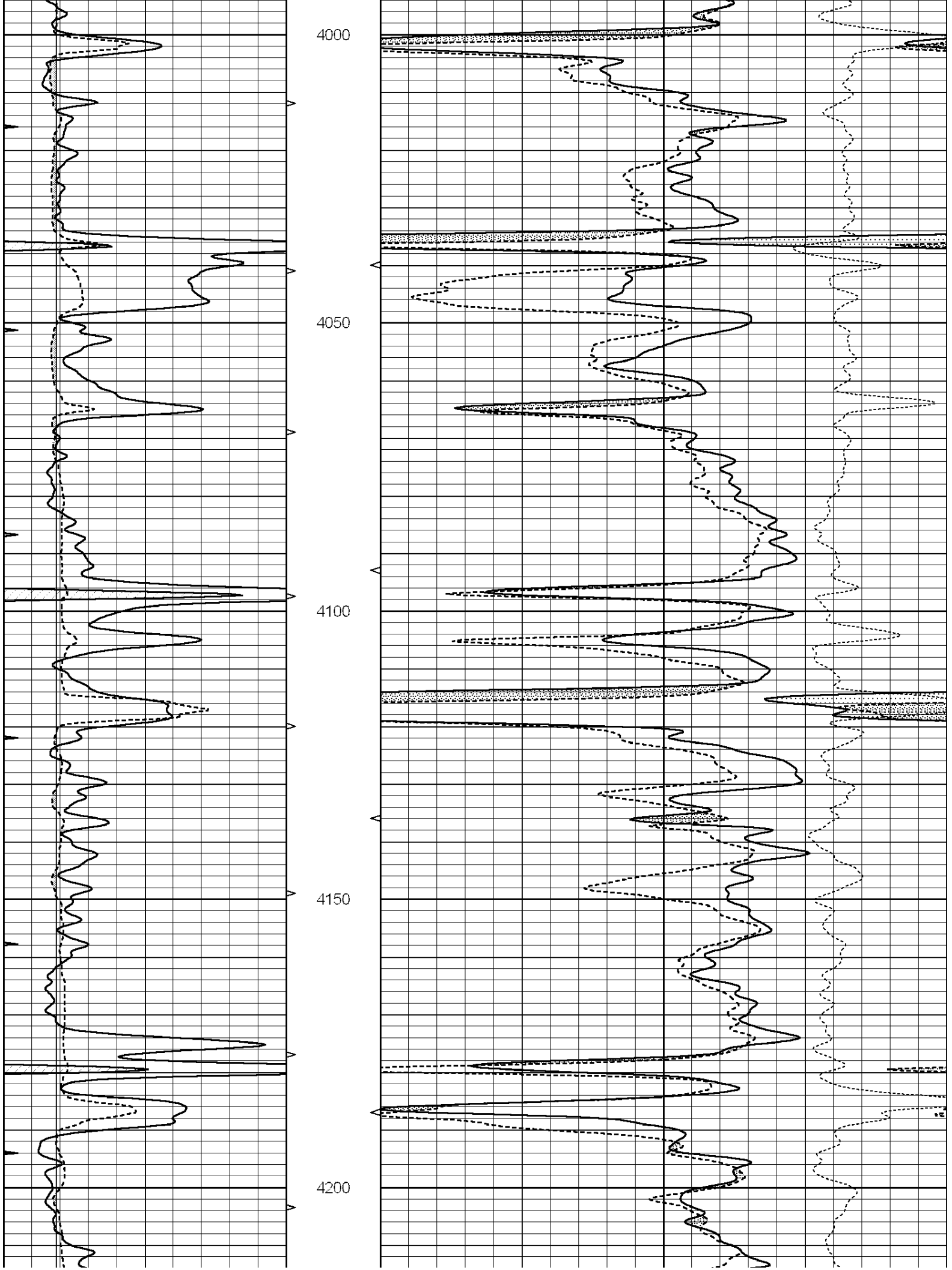
MAIN SECTION

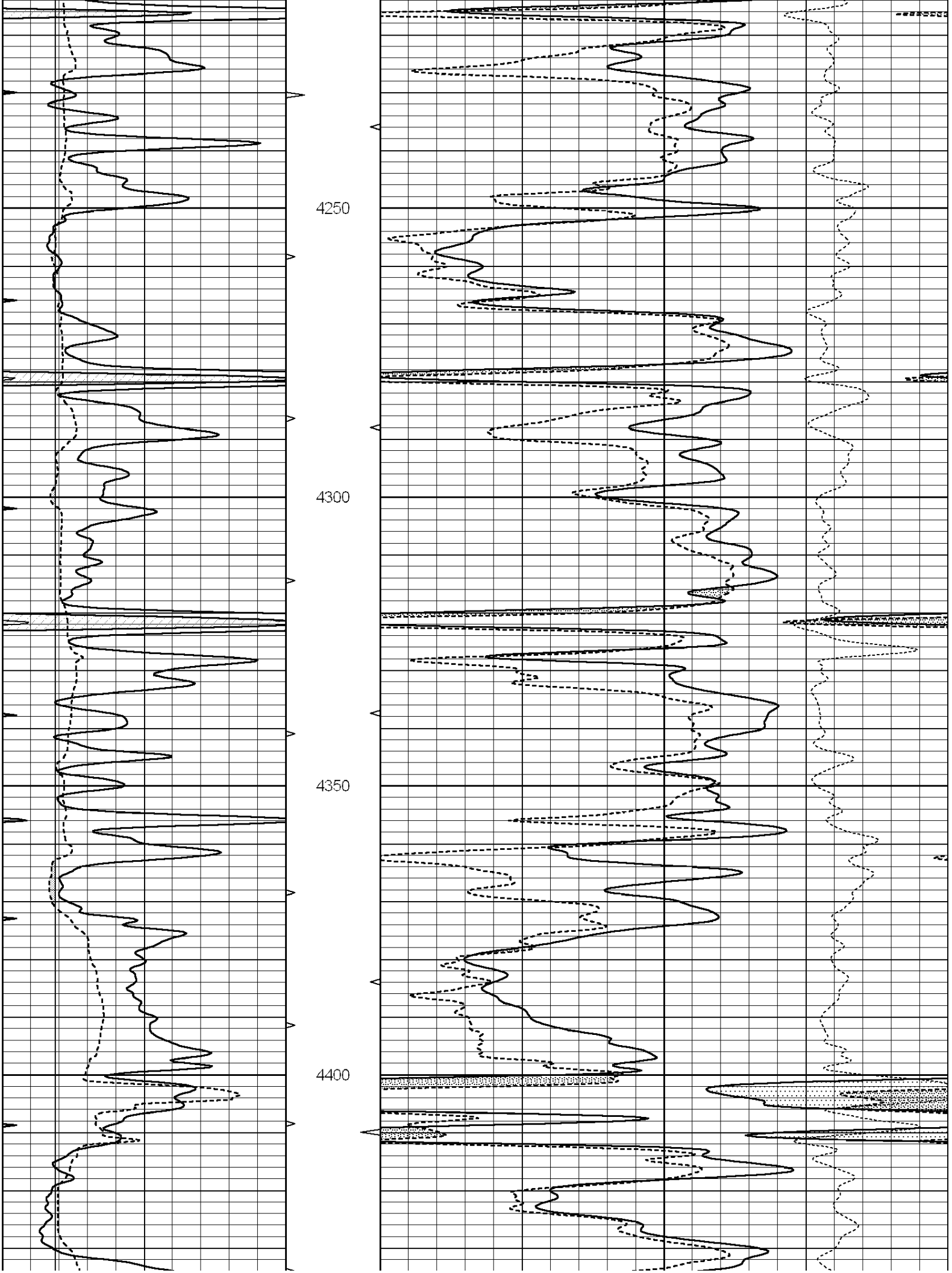
Database File:	30687ddn.db
Dataset Pathname:	pass3.3
Presentation Format:	den_neu
Dataset Creation:	Tue Mar 01 05:57:03 2016
Charted by:	Depth in Feet scaled 1:240

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		




3800
3850
3900
3950


4000
4050
4100
4150
4200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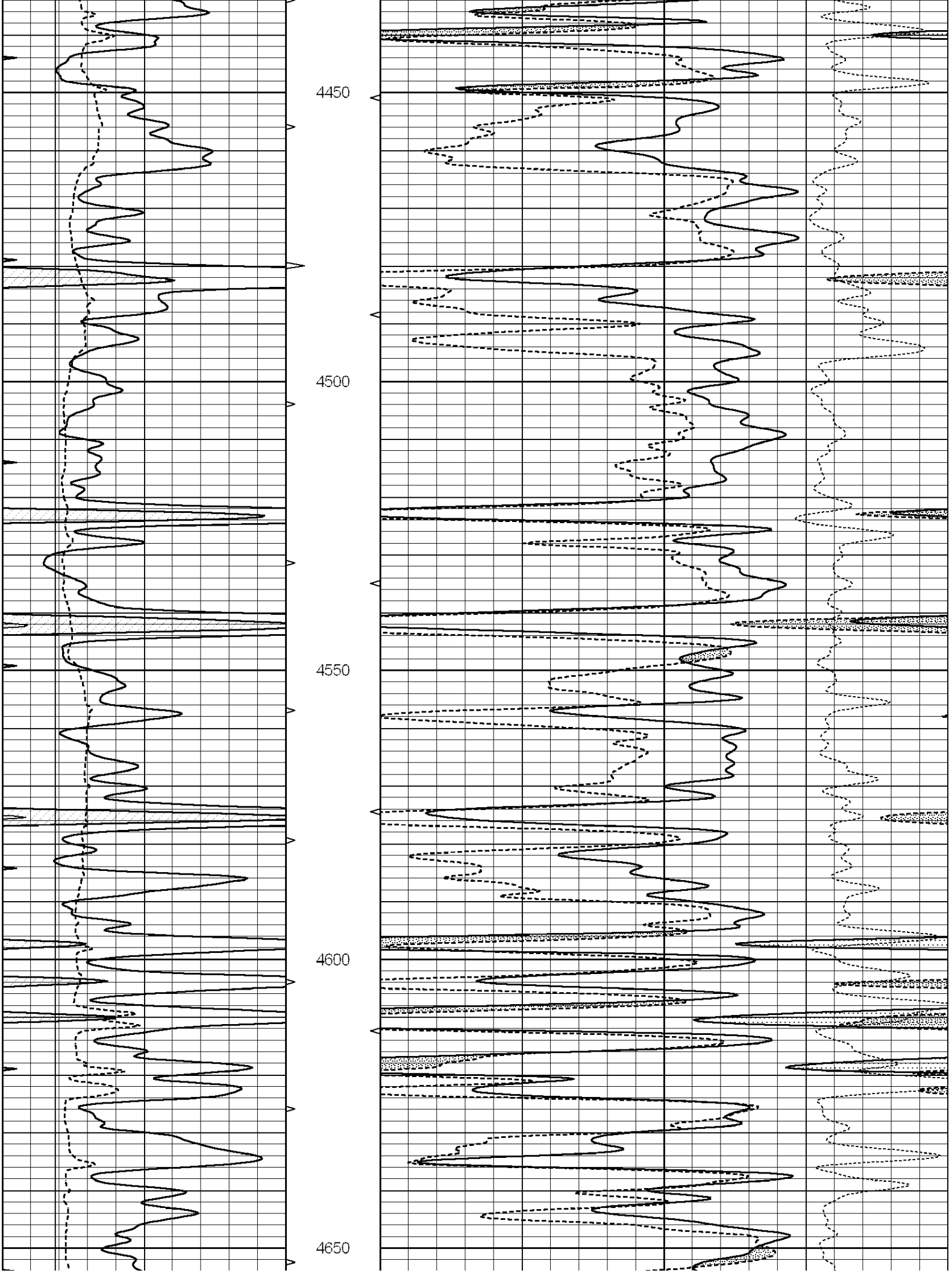
4300
4350
4400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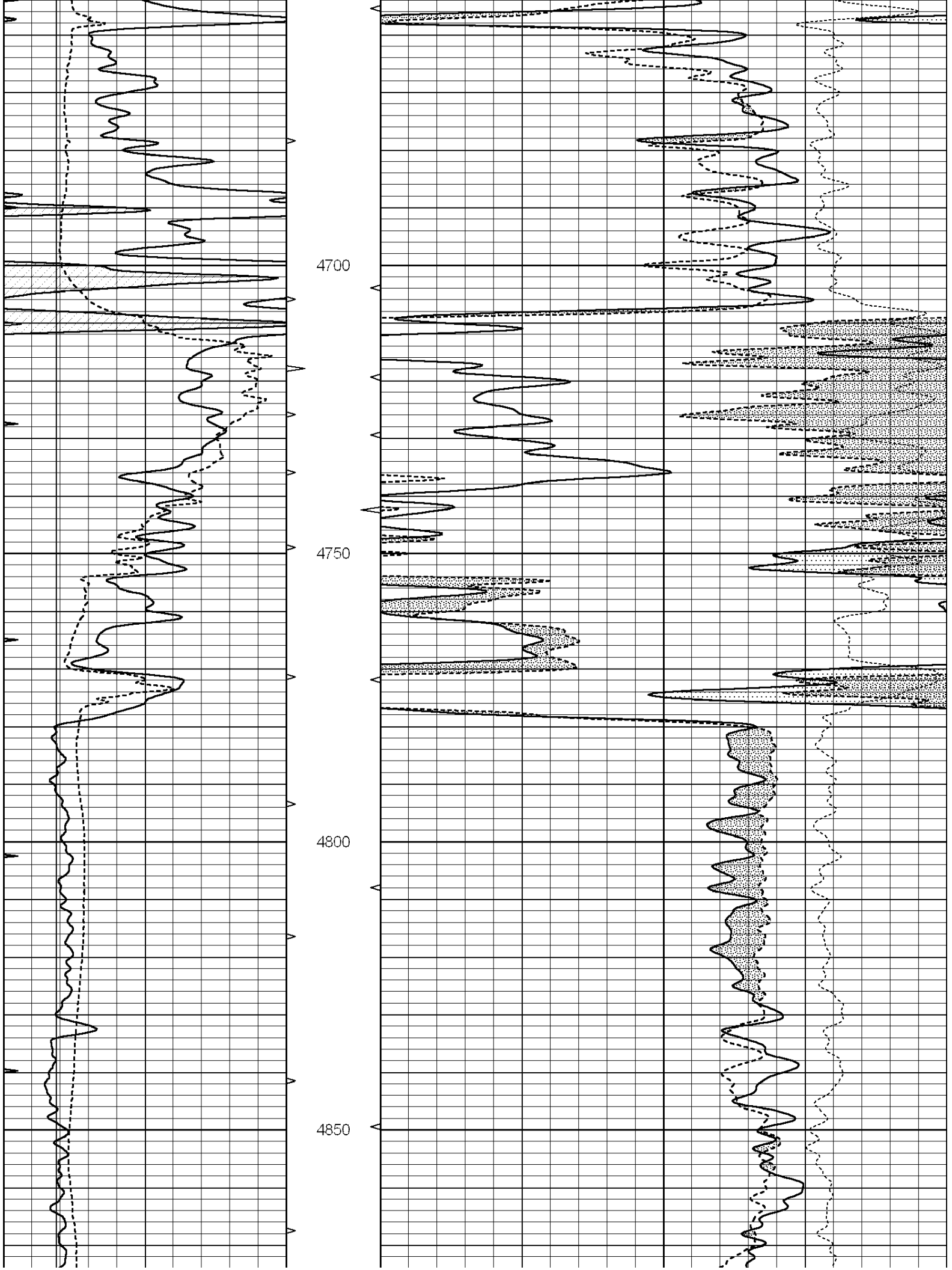
4650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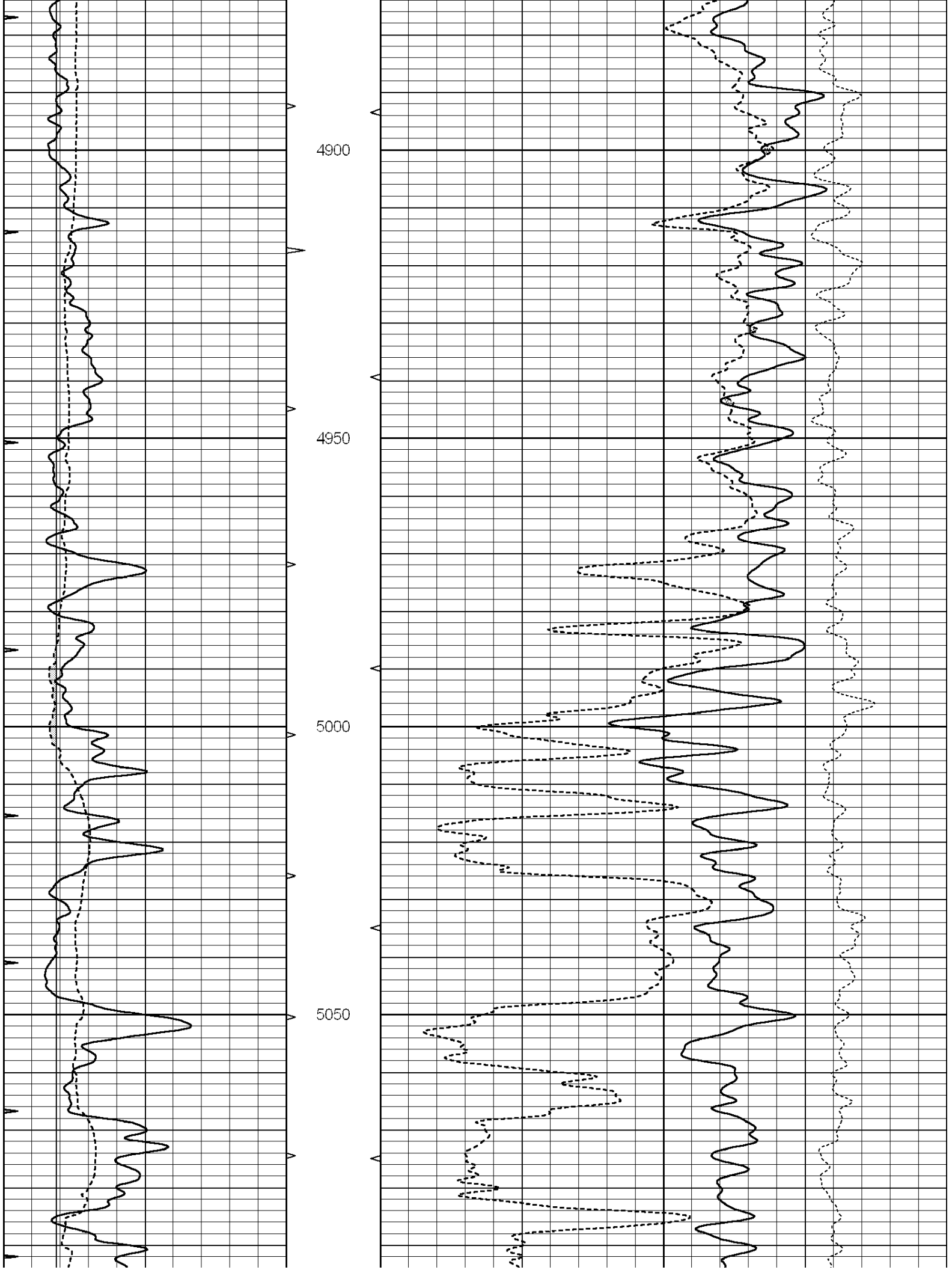
4850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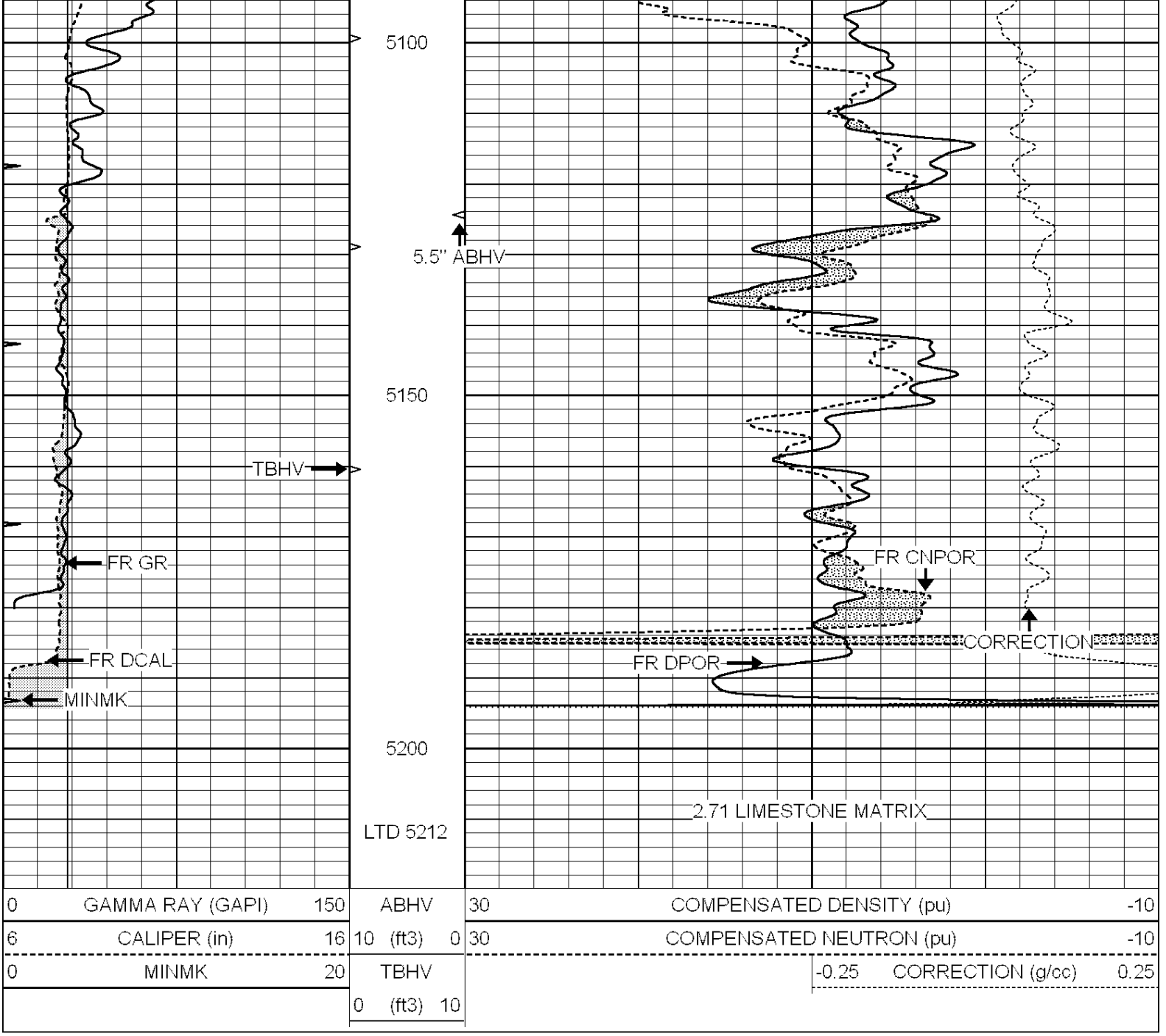
5000
5050



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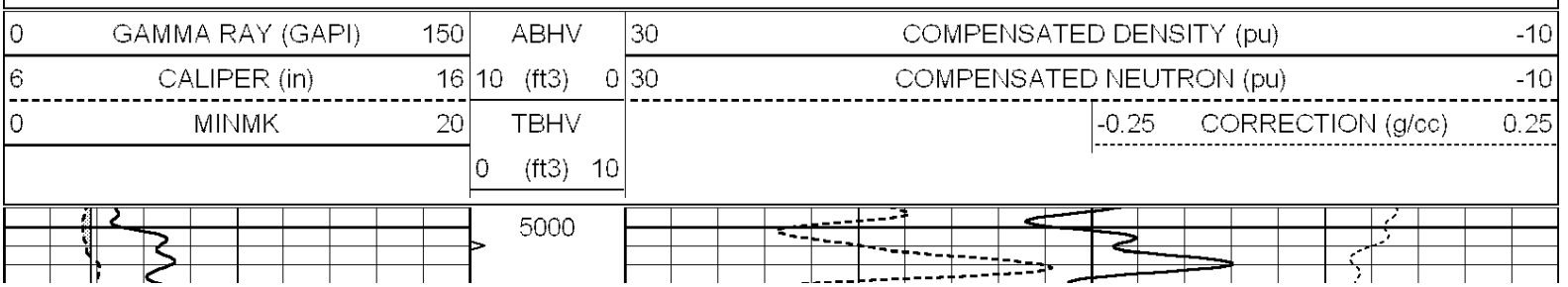
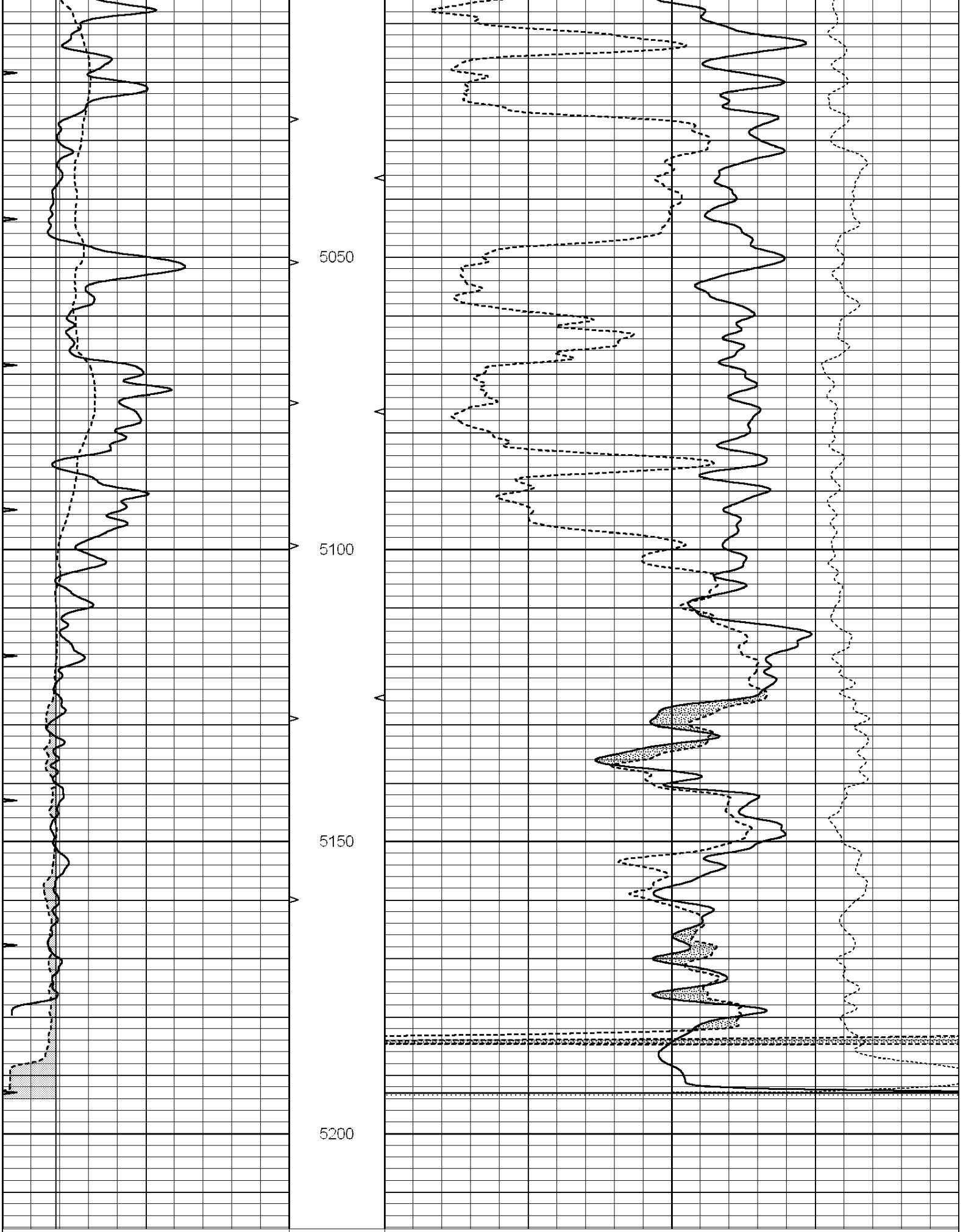
REPEAT SECTION

Database File:	30687ddn.db
Dataset Pathname:	pass2.6
Presentation Format:	den_neu
Dataset Creation:	Tue Mar 01 04:31:16 2016 by Calc SOC 120430
Charted by:	Depth in Feet scaled 1:240




5050
5100
5150
5200
0 GAMMA RAY (GAPI) 150
6 CALIPER (in) 16
ABHV
10 (ft3) 0
30 COMPENSATED DENSITY (pu) -10
30 COMPENSATED NEUTRON (pu) -10

0	MINMK	20	TBHV			-0.25	CORRECTION (g/cc) 0.25
			0 (ft3) 10				

Calibration Report

Database File: 30687ddn.db
Dataset Pathname: pass3.4
Dataset Creation: Tue Mar 01 06:03:58 2016

Dual Induction Calibration Report

Serial-Model: PROBE9-DILG
Surface Cal Performed: Sun Feb 14 11:27:24 2016
Downhole Cal Performed: Mon Jul 28 12:02:56 2008
After Survey Verification Performed: Mon Jul 28 12:02:56 2008

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	670.000	-10.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	685.000	-22.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.011	0.610	V	0.000	400.000	mmho/m	667.135	-7.256
Medium	0.005	0.712	V	0.000	464.000	mmho/m	655.677	-3.102

Downhole Calibration

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	14.508	388.384	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	166.367	504.400	mmho/m	1.000	0.000
LL3		7.500	V		1400.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		4000.000	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: 004N Model: PRB

Master Calibration

Performed Fri May 30 11:01:00 2014

	Background	Magnesium	Aluminum	Sandstone	
Window 1	1378.8	10804.6	3492.0	12453.4	cps
Window 2	1262.4	9313.5	3076.7	10594.7	cps
Window 3	1077.6	5668.7	2076.0	6314.8	cps
Window 4	306.4	313.0	306.4	315.6	cps
Long Space	0.0	8051.0	1814.3	9332.3	cps
Short Space	1.9	1706.1	1146.0	1707.6	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe		0.0000	2.5700	1.5500	

Rib Angle : 45.0 Rib Slope : 1.002 Density/Spine Ratio : 0.571

Spine Angle	: 75.0	Spine Slope	: 3.745	Spine Intercept	: -18.9

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: 070808
Tool Model: Probe

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 070558
Tool Model: OPEN_GR
Performed: Wed Jan 13 07:49:22 2016

Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps