SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company MULL DRILLING COMPANY, INC.

Well #1-22 CORDER - HENNING UNIT

Field OSGOOD SOUTHEAST

County NESS State KANSAS

Location: API # : 15-135-25207-0000

2534' FNL & 1003' FEL

SEC 22 TWP 16S RGE 23W

Other Services
CDL/CNL/PE
MEL/SONIC

Permanent Datum	GROUND LEVEL	Elevation	2480
Log Measured From	KELLY BUSHING 5' A.G.L.		
Drilling Measured From	KELLY BUSHING		

Elevation
K.B. 2485
D.F. 2483
G.L. 2480

Company MULL DRILLING COMPANY, INC.
Well #1-22 CORDER - HENNING UNIT
Field OSGOOD SOUTHEAST
County NESS
State KANSAS

Date	2/15/11		
Run Number	ONE		
Depth Driller	4575		
Depth Logger	4572		
Bottom Logged Interval	4570		
Top Log Interval	00		
Casing Driller	8 5/8"@233'		
Casing Logger	234		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 6,100 PPM	
Density / Viscosity	9.6/62		
pH / Fluid Loss	9.5/6.8		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.700@80F		
Rmf @ Meas. Temp	.525@80F		
Rmc @ Meas. Temp	.840@80F		
Source of Rmf / Rmc	MEASUREMENT		
Rm @ BHT	.463@121F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	8:15 P.M.		
Maximum Recorded Temperature	121F		
Equipment Number	0836		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	KEVIN KESSLER		

<<< Fold Here >>>

Comments

THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395

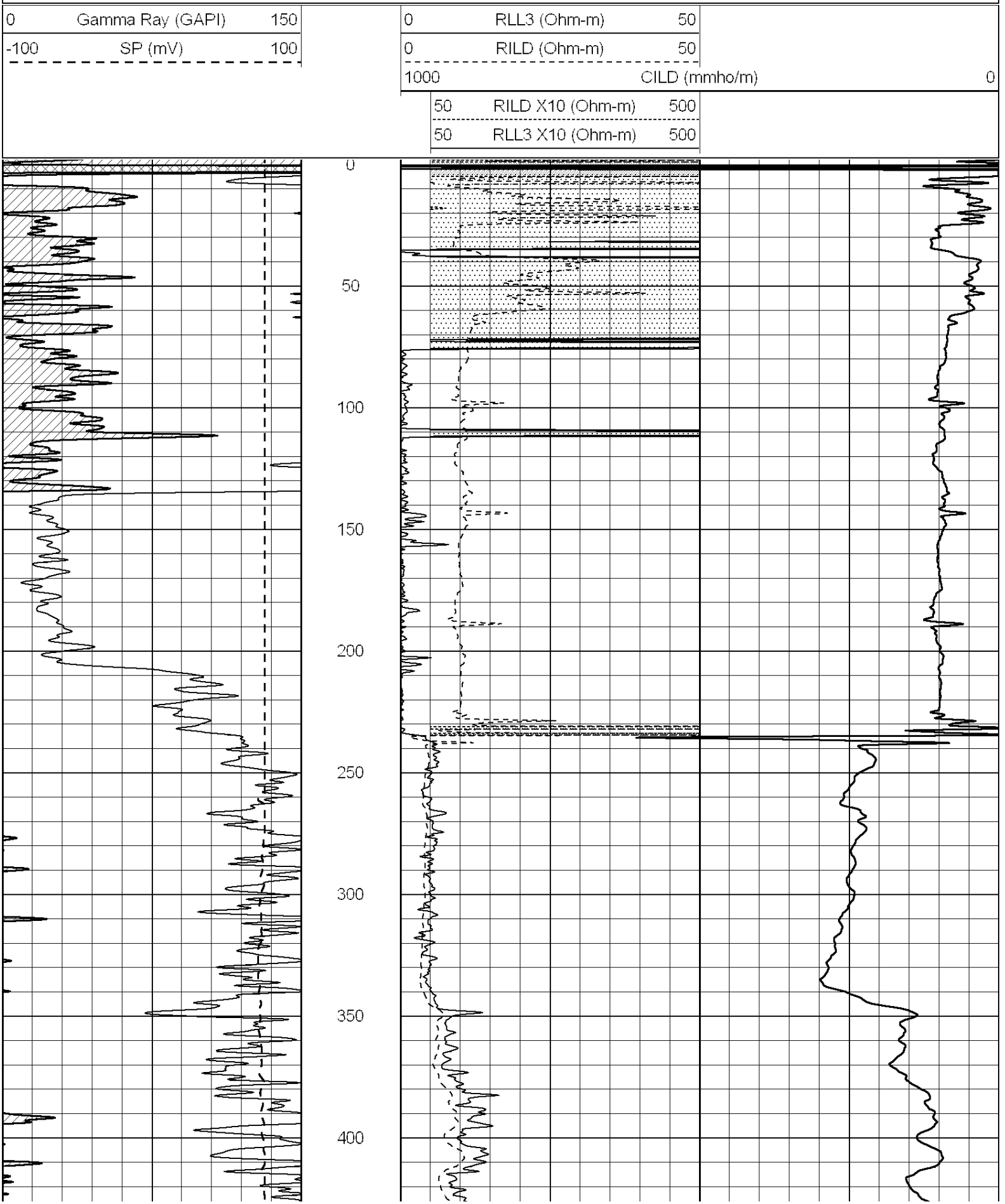
DIRECTIONS

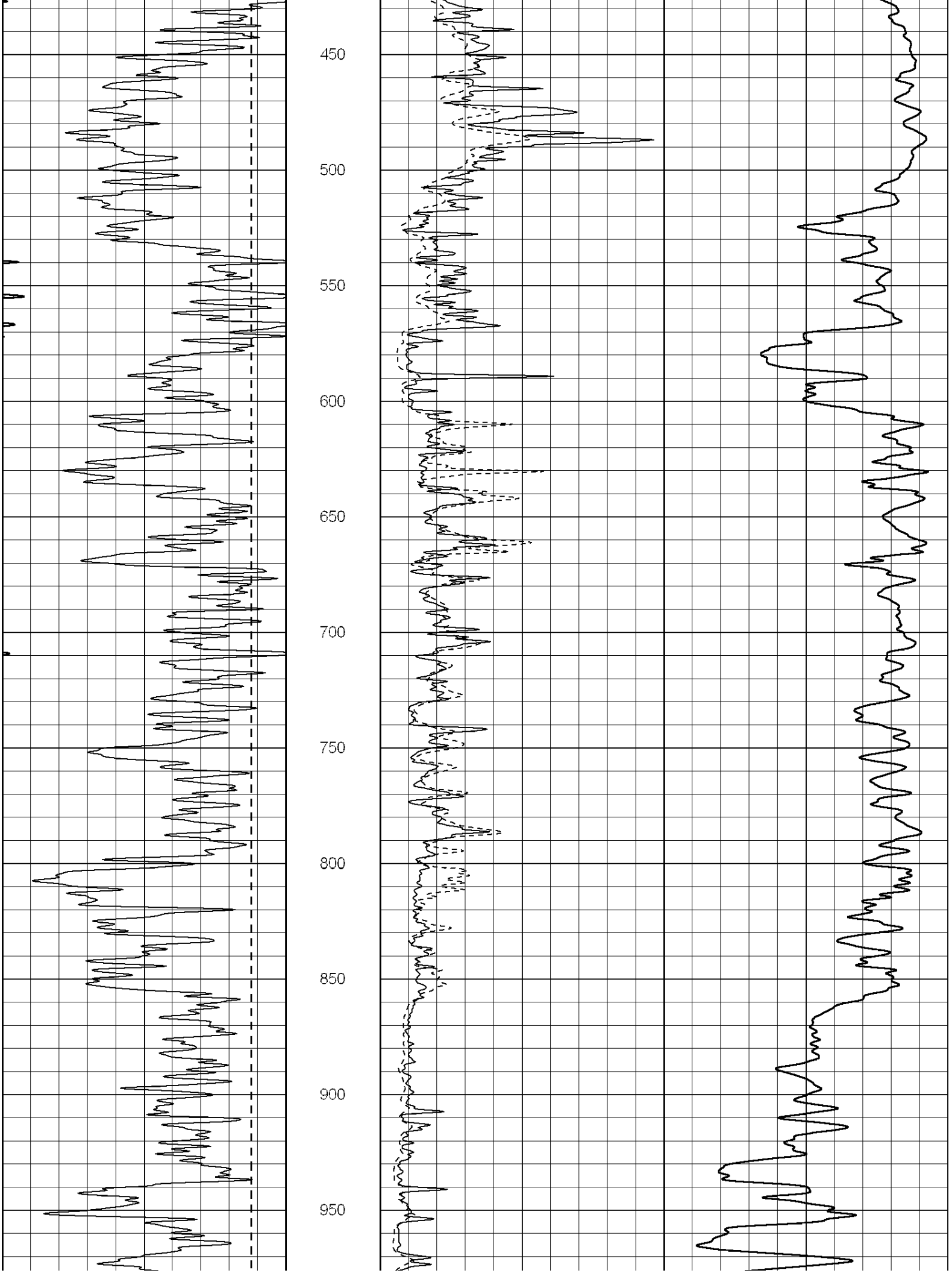
BROWNELL, KS. 6W. ON HWY 4 TO "RD. U", 1/2N., E. INTO

MAIN SECTION

SUPERIOR
Hays,
Kansas

Database File:	006288pe.db
Dataset Pathname:	pass3.6
Presentation Format:	dil2
Dataset Creation:	Tue Feb 15 21:39:42 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:600

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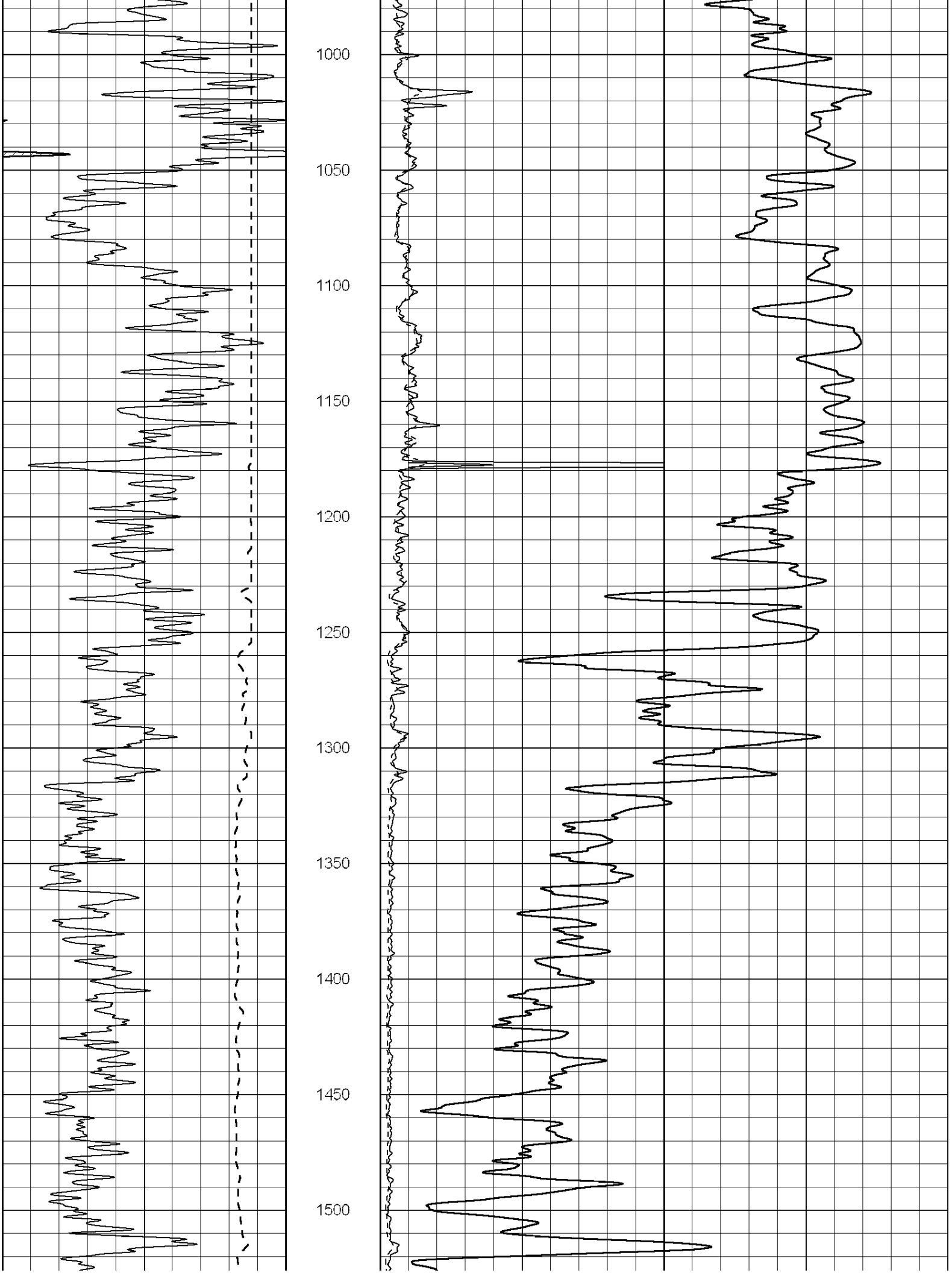
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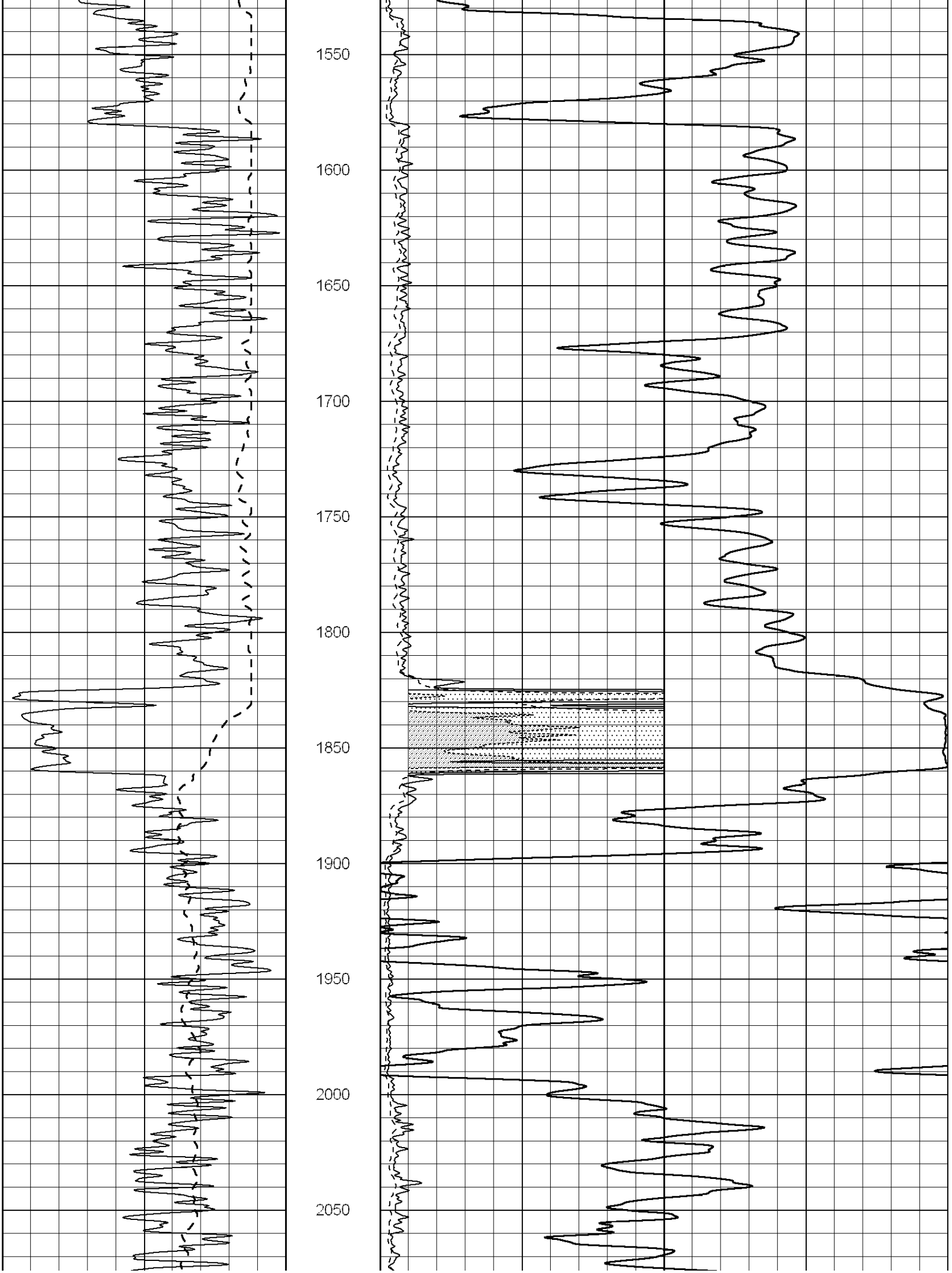
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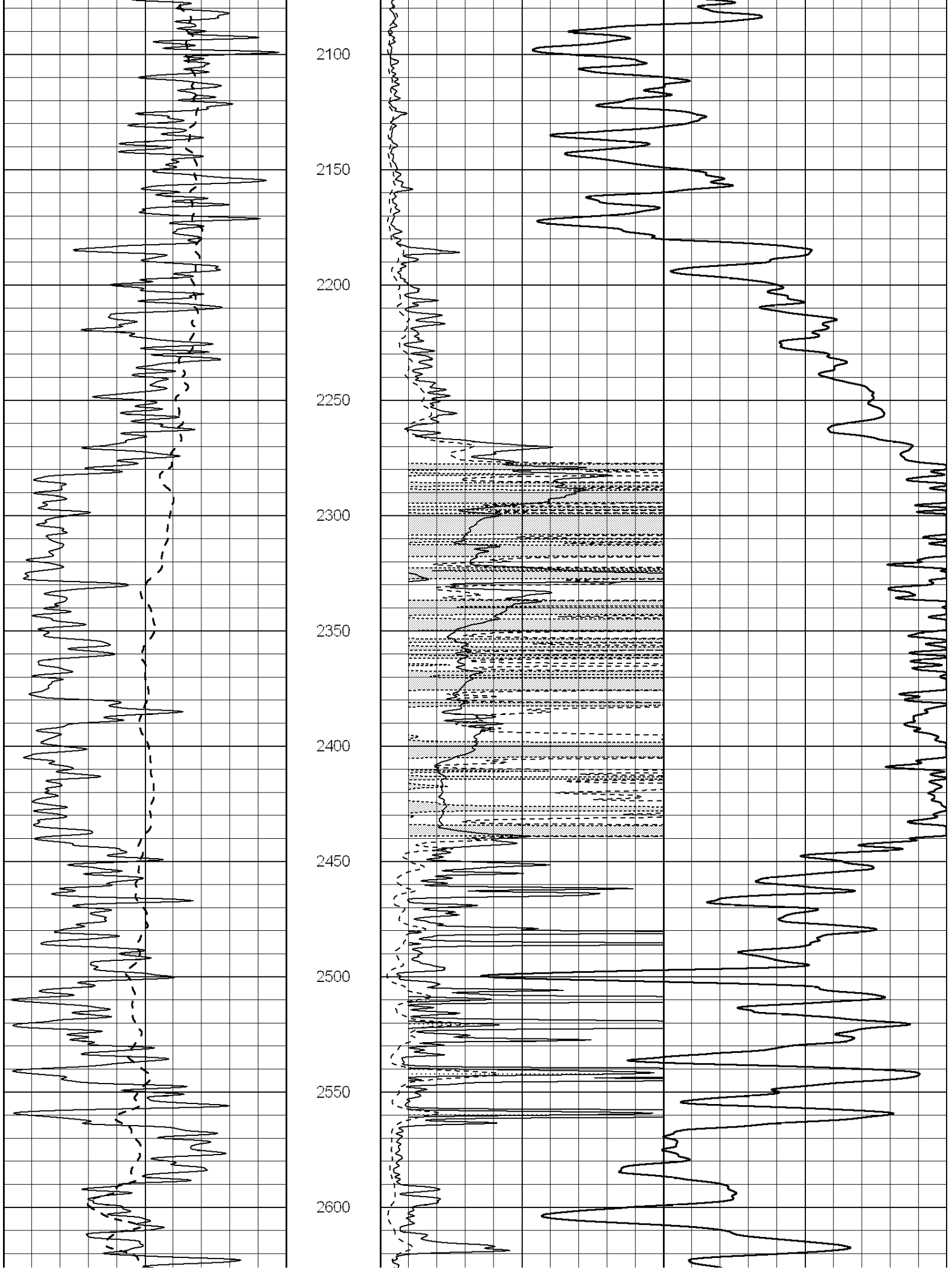
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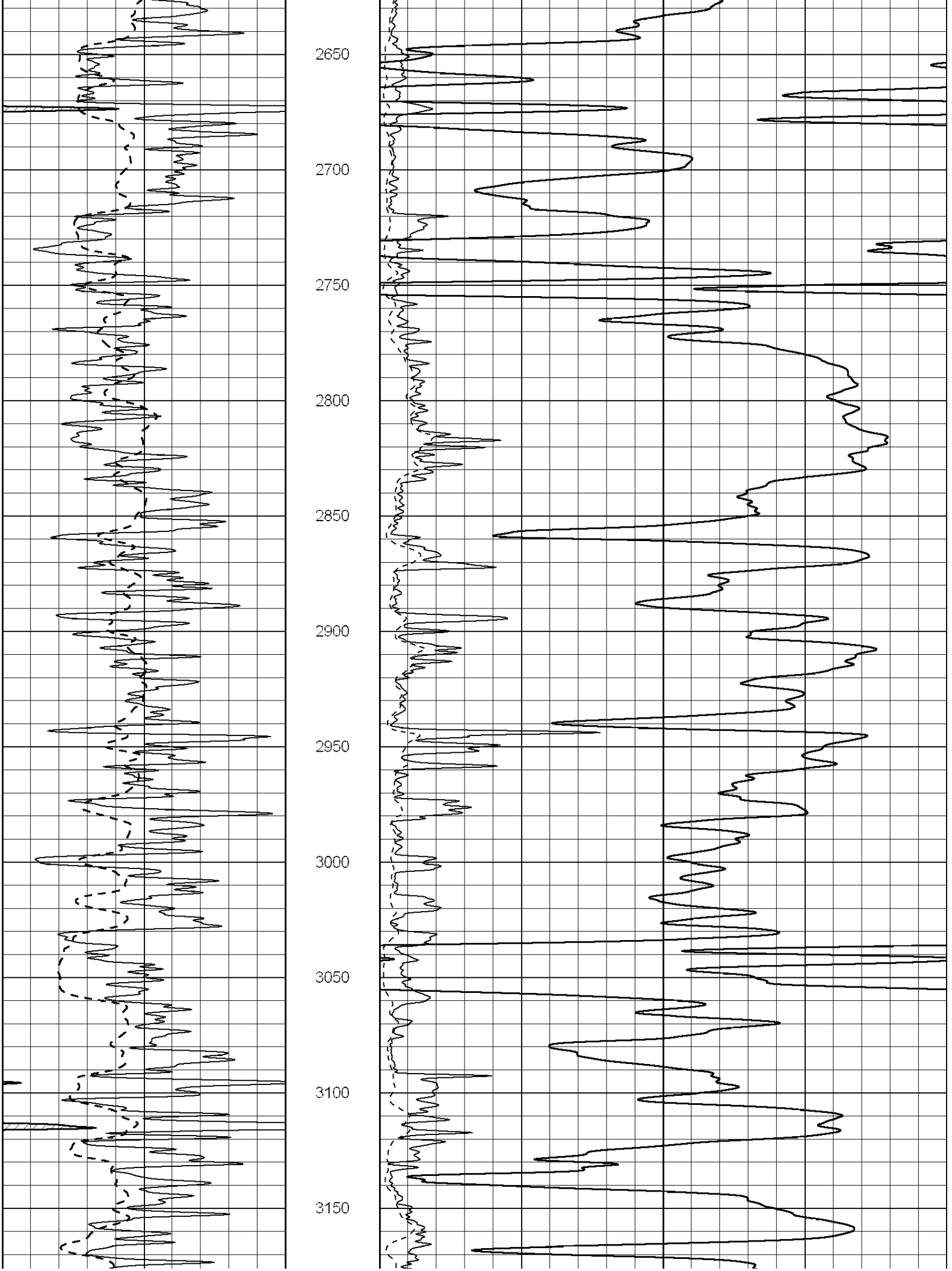
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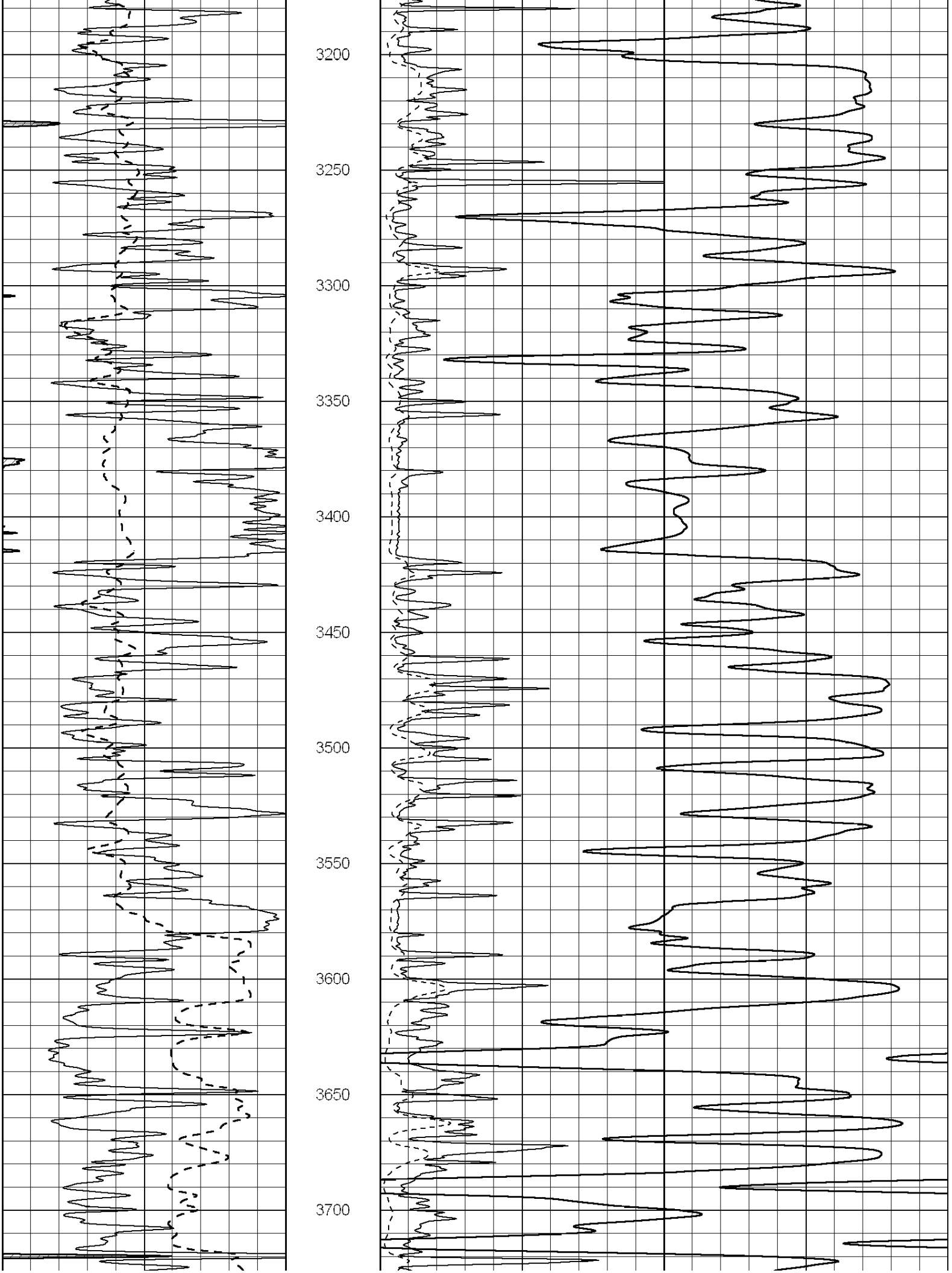
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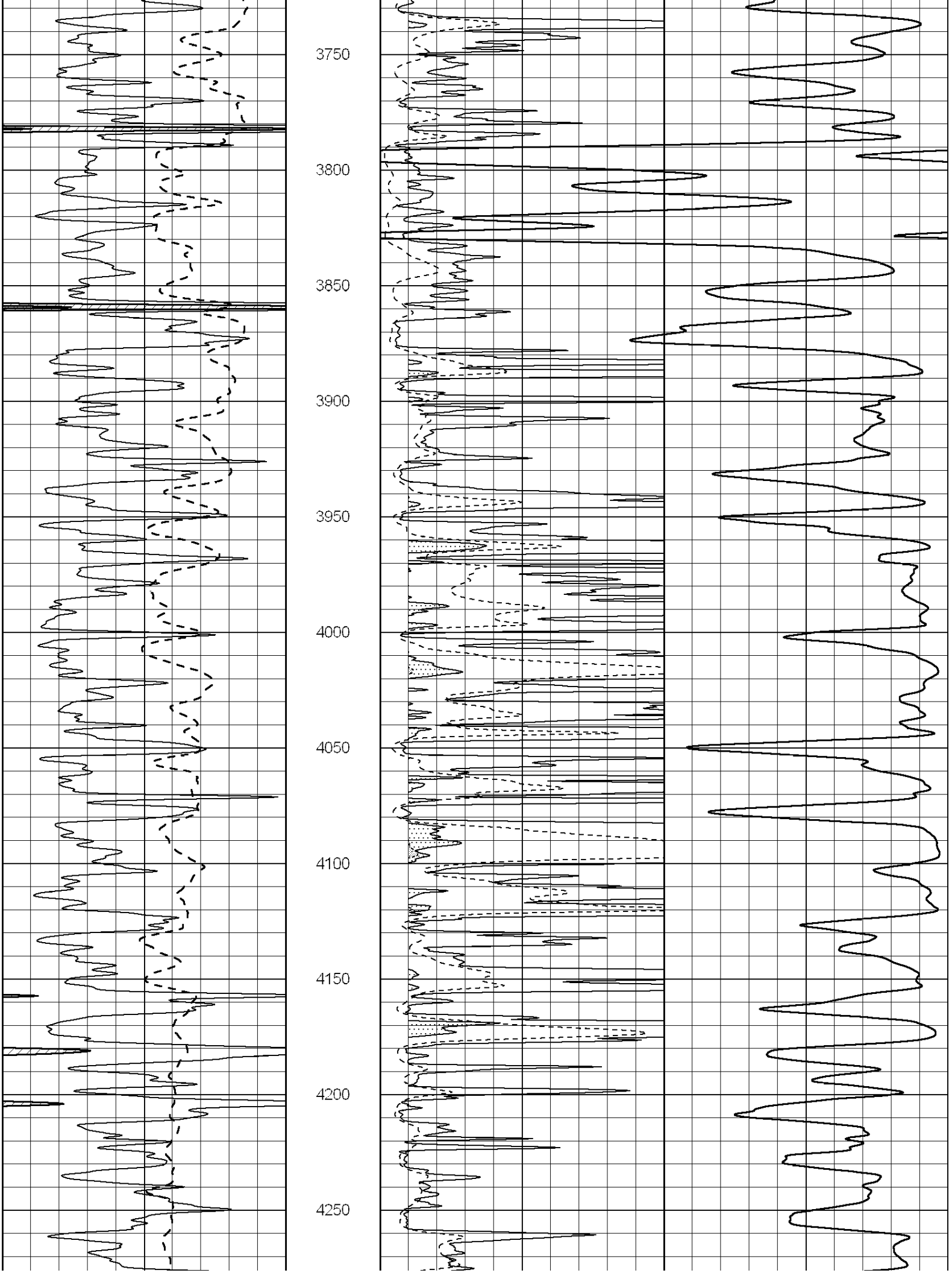
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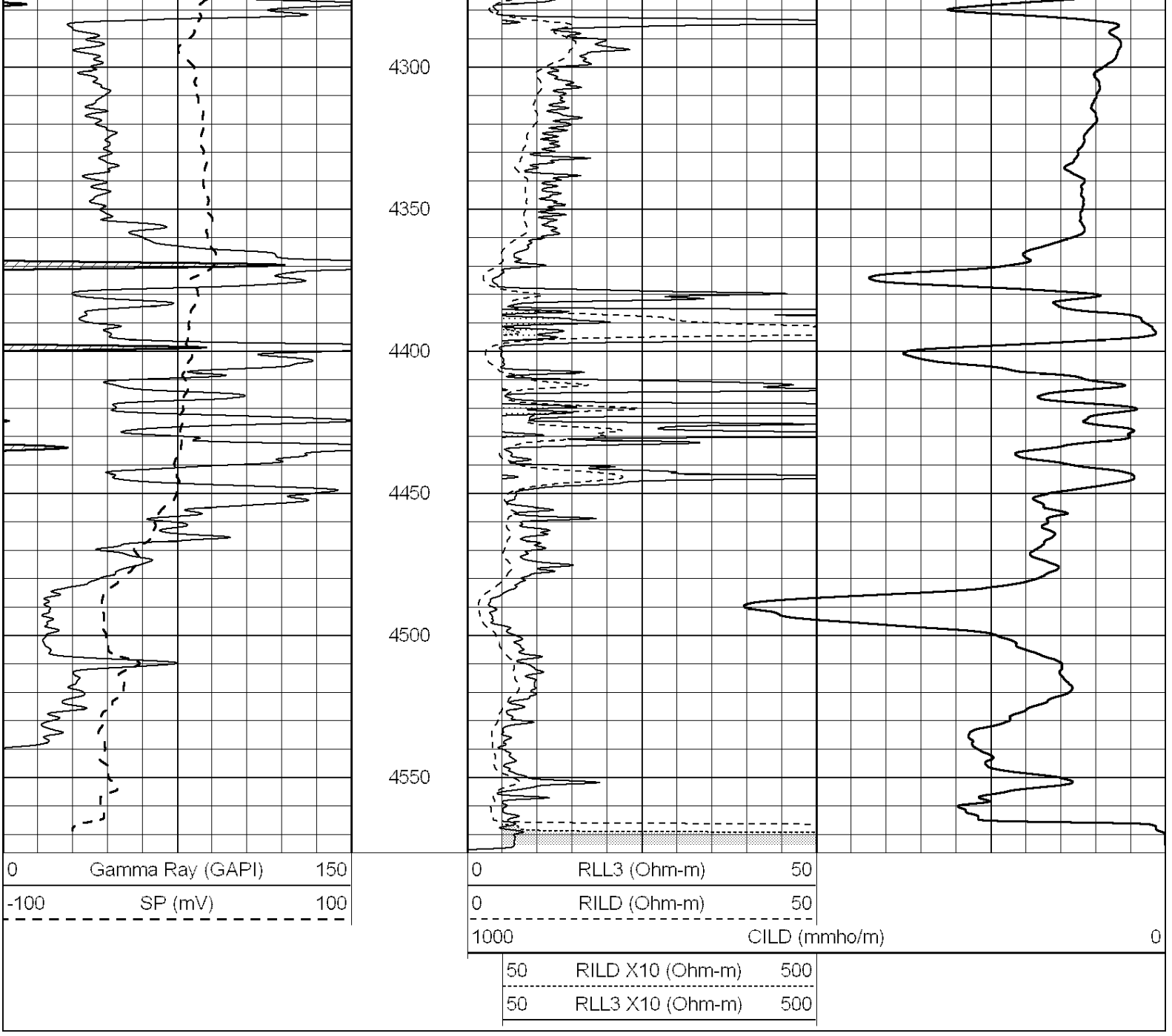

SUPERIOR
Hays,
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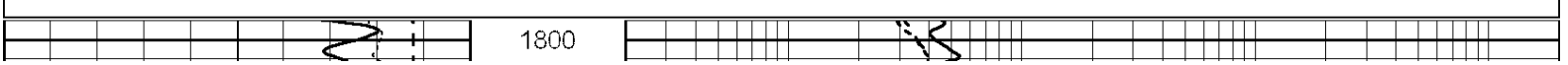
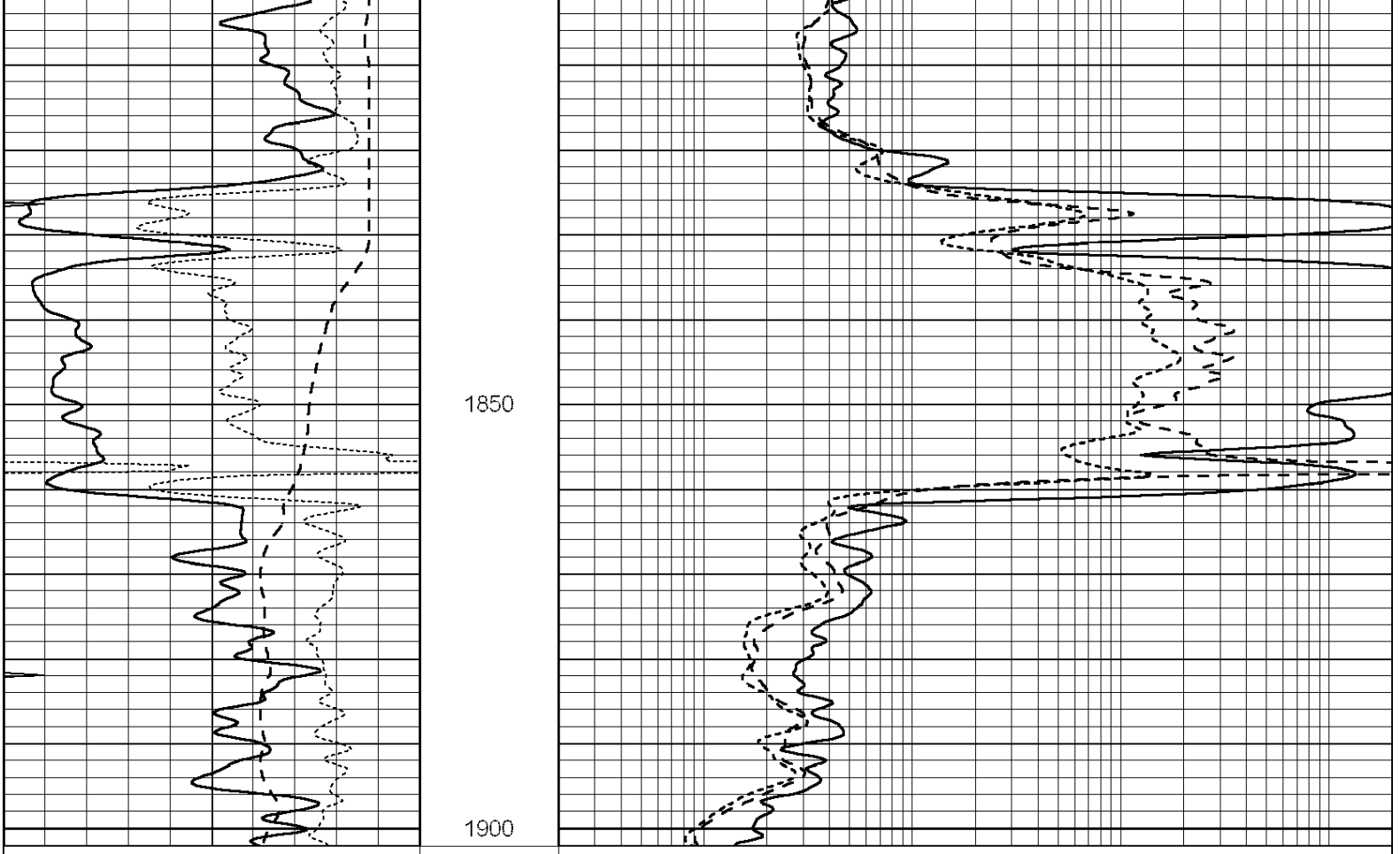
ANHYDRITE

Database File:	006288pe.db
Dataset Pathname:	pass3.7
Presentation Format:	dil
Dataset Creation:	Tue Feb 15 21:40:35 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

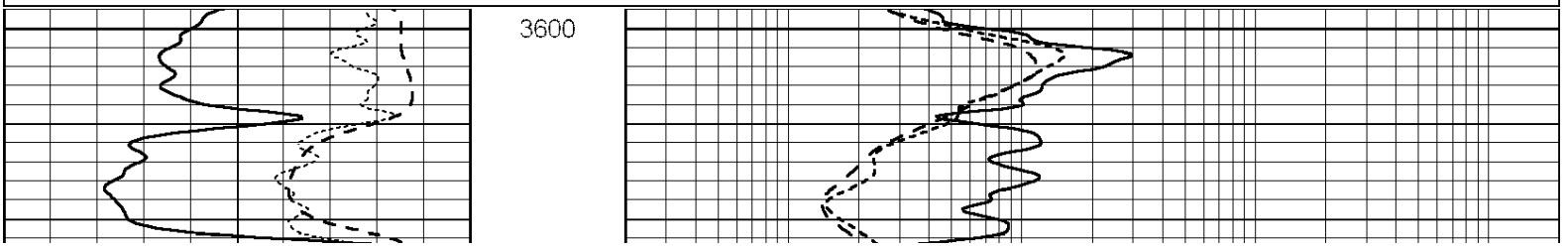
SUPERIOR
Hays,
Kansas

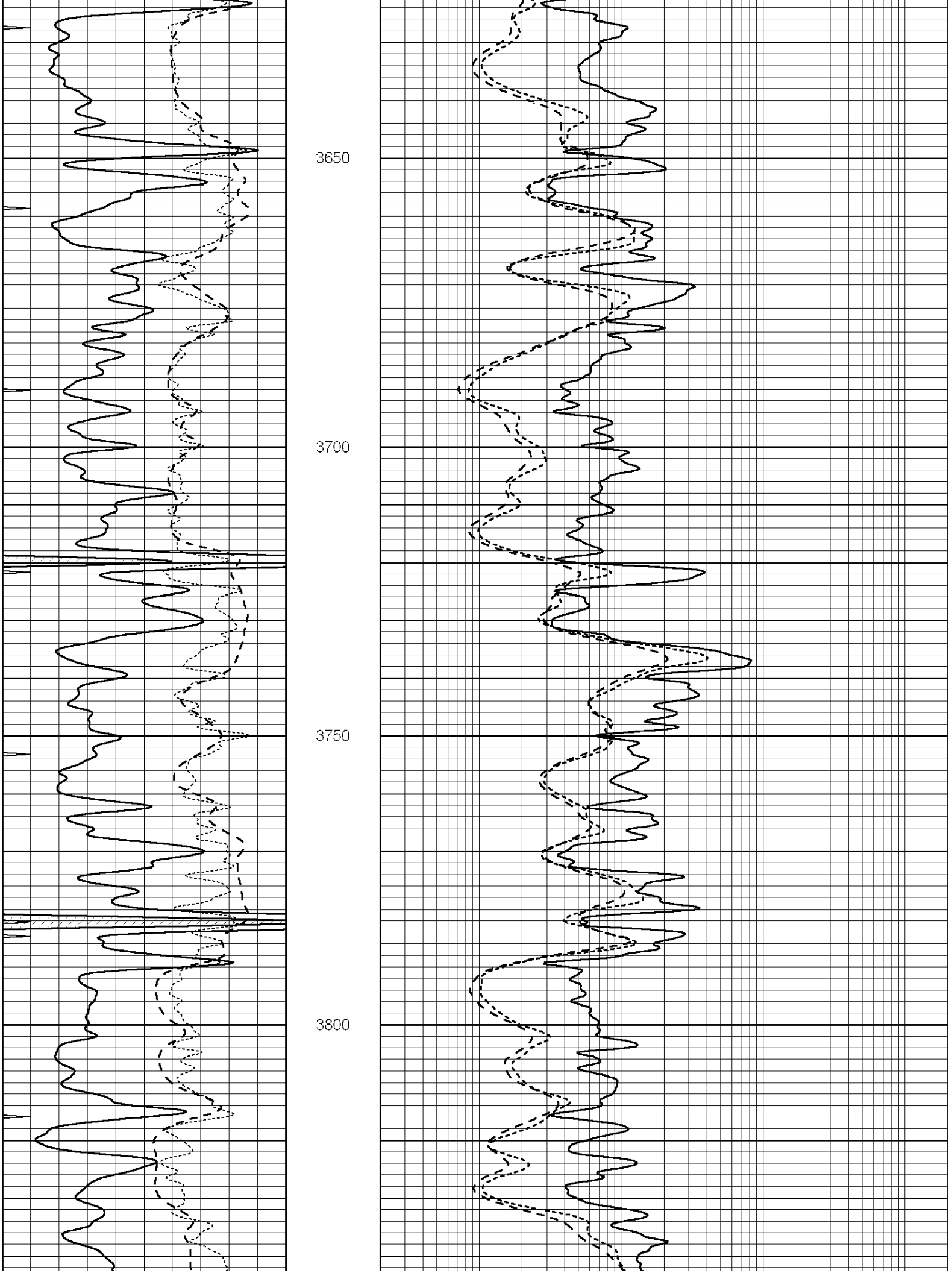
MAIN SECTION

Database File: 006288pe.db
Dataset Pathname: pass3.6
Presentation Format: dil
Dataset Creation: Tue Feb 15 21:39:42 2011 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

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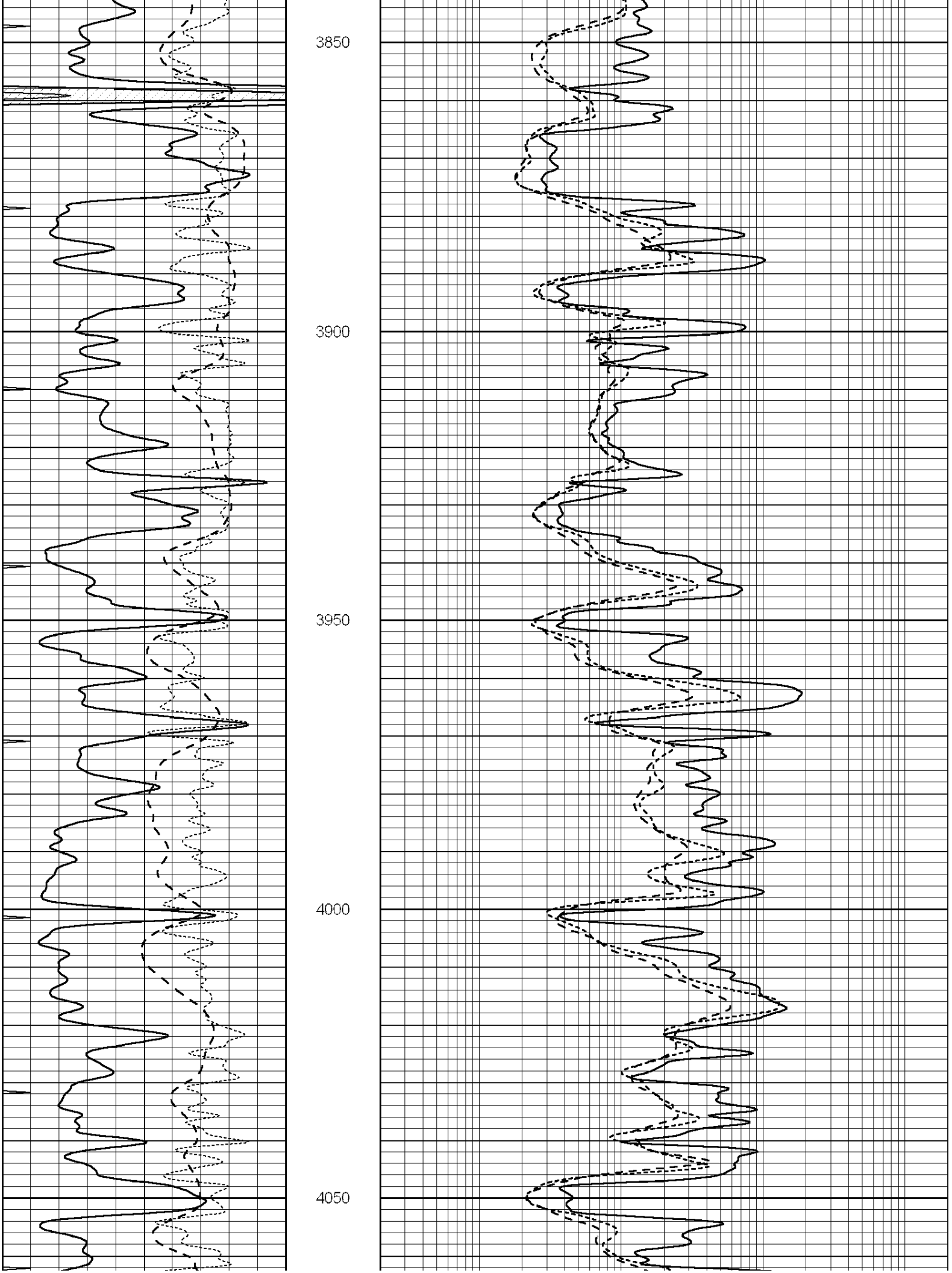
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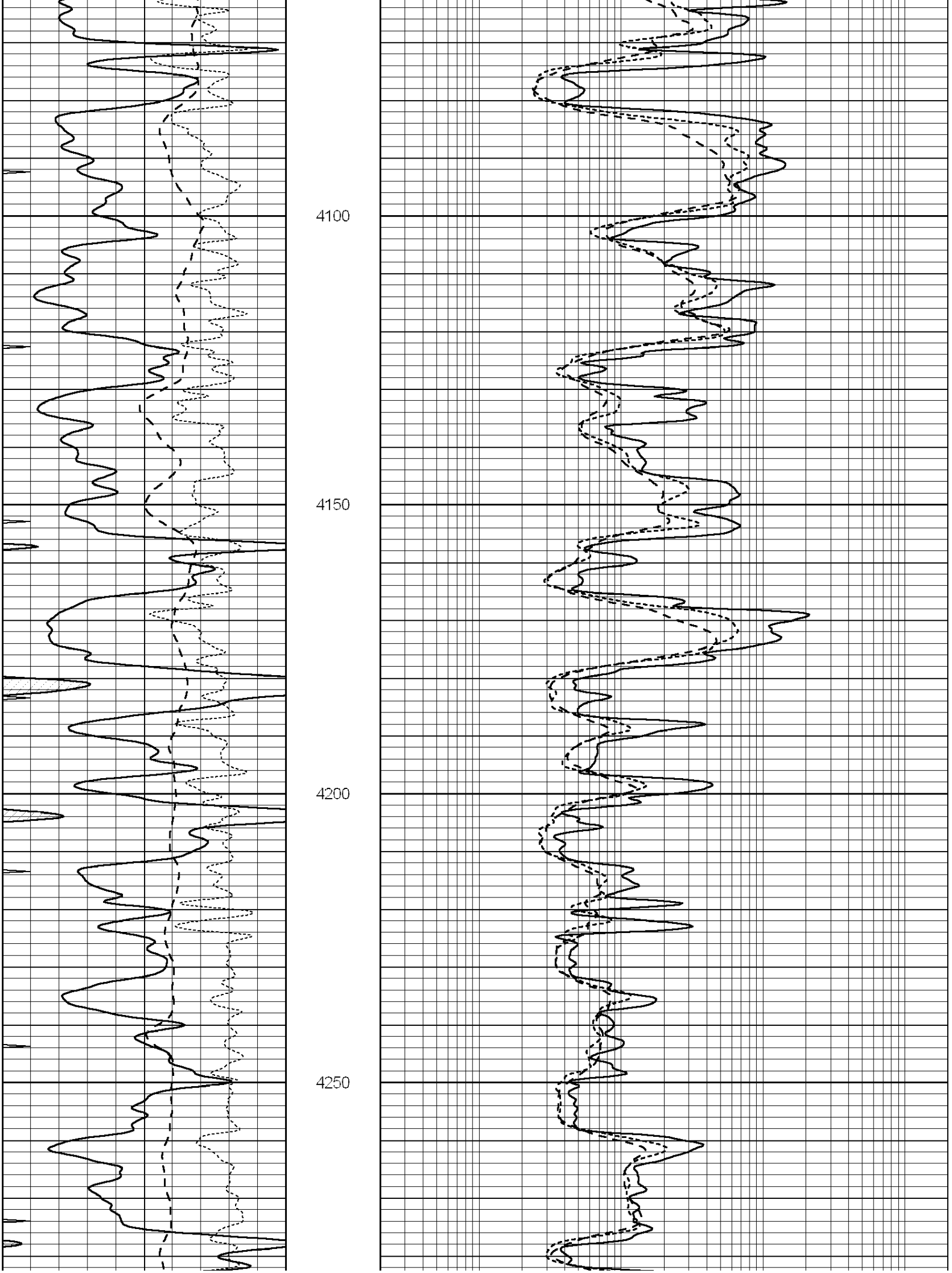
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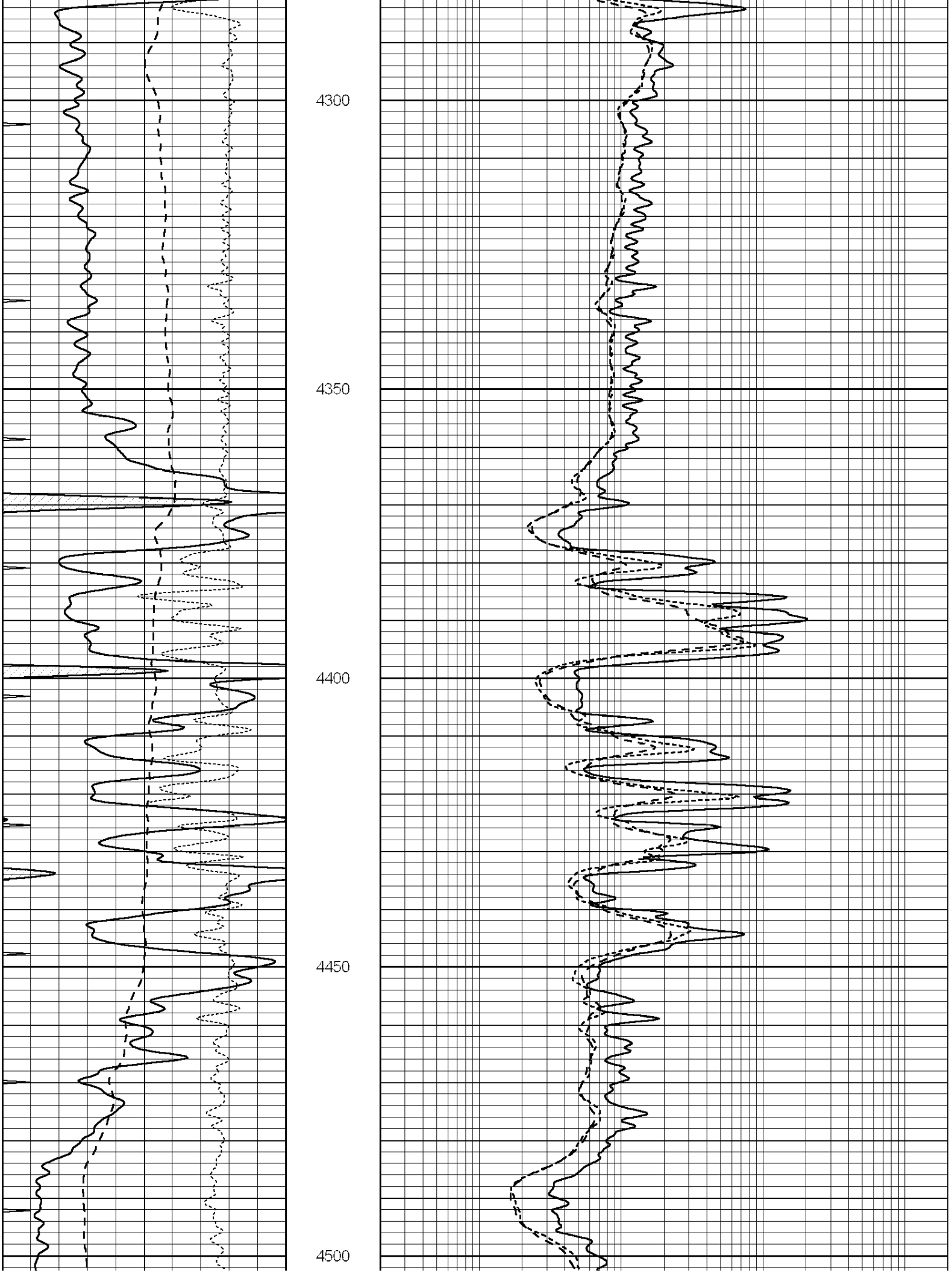
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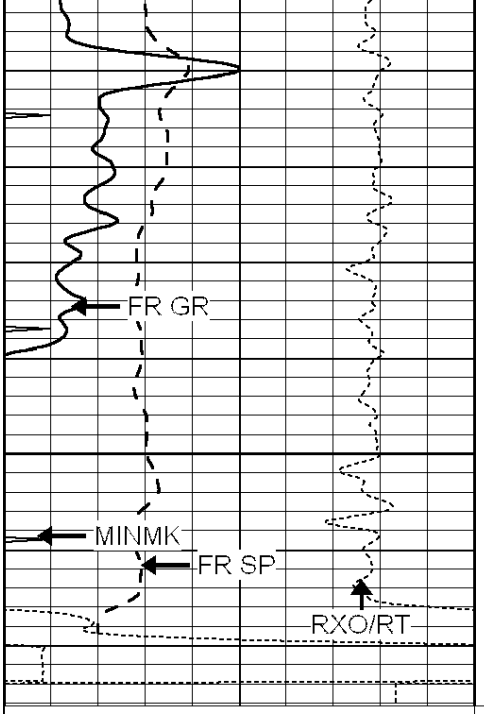

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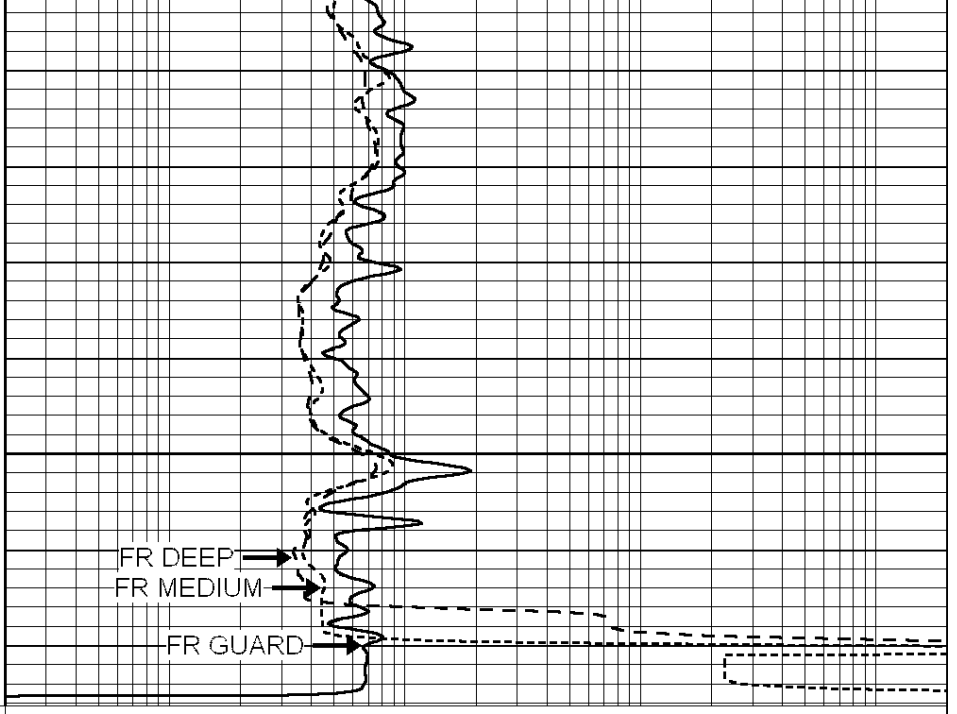
LTD 4572



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

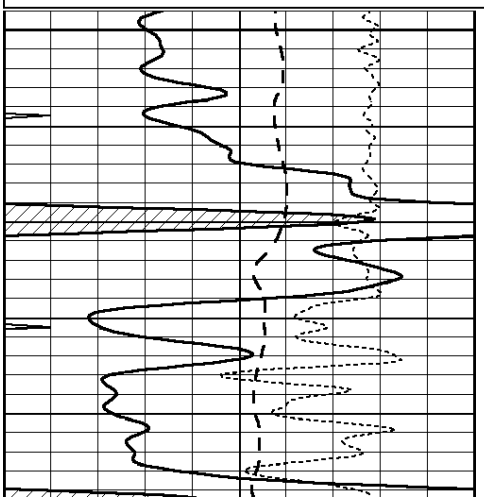
REPEAT SECTION

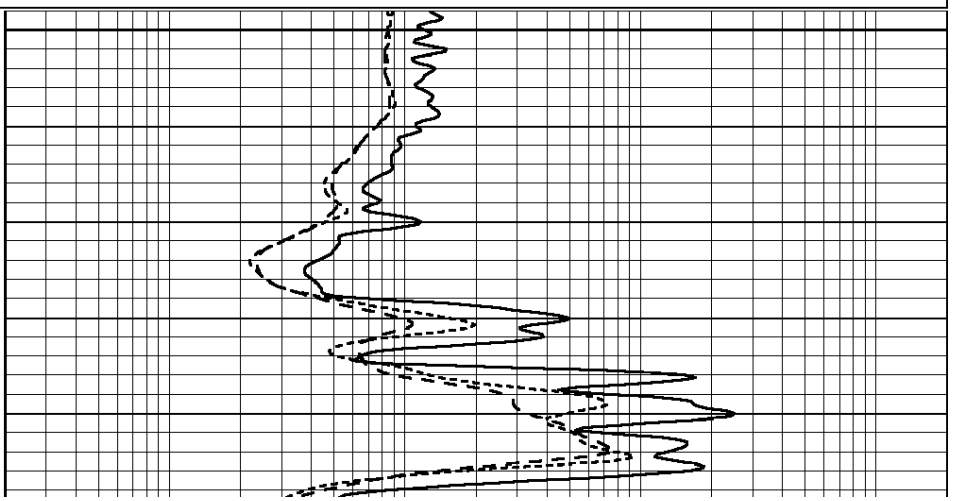
Database File:	006288pe.db
Dataset Pathname:	pass2.5
Presentation Format:	dil
Dataset Creation:	Tue Feb 15 21:09:27 2011 by Calc Open-Cased 090629
Charted by:	Depth in Feet scaled 1:240

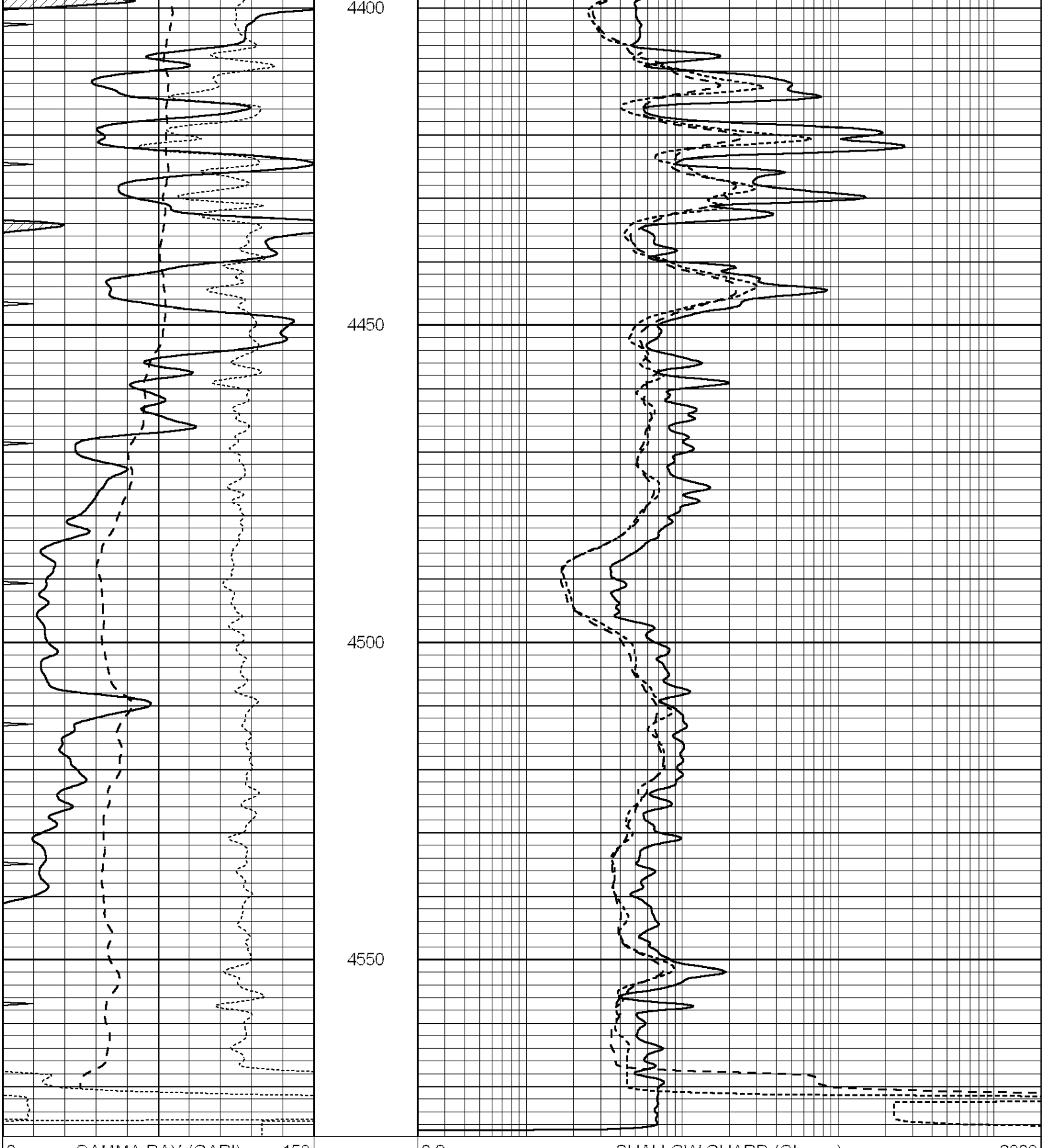
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

4350







0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	10

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Database File: 006288pe.db
Dataset Pathname: pass3.6

Dataset Creation: Tue Feb 15 21:39:42 2011 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: DIL3-GEAR
Performed: Tue Feb 15 19:33:25 2011

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.011	0.656	V	0.000	400.000	mmho/m	640.000	0.000
Medium	0.013	0.740	V	0.000	462.500	mmho/m	700.000	-13.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.002	0.645	V	0.000	400.000	mmho/m	622.059	-1.071
Medium	0.007	0.740	V	0.000	462.500	mmho/m	631.393	-4.555

Litho Density Calibration Report

Serial: 003N Model: PRB
Performed Tue Sep 08 14:14:44 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2042.6	12312.8	4225.8	13758.4	cps
Window 2	1855.8	10134.7	3624.2	11113.1	cps
Window 3	1639.4	6760.2	2716.3	7260.3	cps
Window 4	466.4	469.2	466.1	476.5	cps
Long Space	0.0	8278.9	1768.4	9257.4	cps
Short Space	2.2	2377.3	1544.1	2574.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept	: -18.8

Caliper

	Readings	Reference
Low Ref	1.8	5.7
High Ref	4.6	14.0
	Gain: 3.0	Offset: 0.5

Compensated Neutron Calibration Report

Serial Number: NEU_3I
Tool Model: G

CALIBRATION

Detector	Readings		Target		Normalization
Short Space	997.00	cps	1000.00	cps	1.0000
Long Space	986.00	cps	1000.00	cps	1.0000

Gamma Ray Calibration Report

Serial Number: GR3
Tool Model: OPEN
Performed: Tue Feb 15 20:20:59 2011

Calibrator Value: 200.0 GAPI

Background Reading: 3.0 cps
Calibrator Reading: 186.0 cps

Sensitivity:	0.6500	GAPI/cps