SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company BLACK DIAMOND OIL COMPANY

Well ROY/GAGER #3

Field

County ROOKS State KANSAS

Location: API # : 15-163-24039

2130' FNL & 2280' FWL

SEC 9 TWP 7S RGE 20W

Other Services
CDL/CNL
MICRO

Permanent Datum GROUND LEVEL Elevation 2157

Log Measured From KELLY BUSHING 5' A.G.L.

Drilling Measured From KELLY BUSHING

Elevation
K.B. 2162
D.F.
G.L. 2157

Company BLACK DIAMOND OIL COMPANY
Well ROY/GAGER #3
Field
County ROOKS
State KANSAS

Date	5-21-12		
Run Number	ONE		
Depth Driller	3678		
Depth Logger	3680		
Bottom Logged Interval	3678		
Top Log Interval	00		
Casing Driller	217		
Casing Logger	217		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.2 / 58		
pH / Fluid Loss	10.5 / 8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.90 @ 88F		
Rmf @ Meas. Temp	0.68 @ 88F		
Rmc @ Meas. Temp	1.08 @ 88F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	.710 @ 112F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	10:30 P.M.		
Maximum Recorded Temperature	112F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	RUPP		
Witnessed By	JEFF LAWLER		

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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

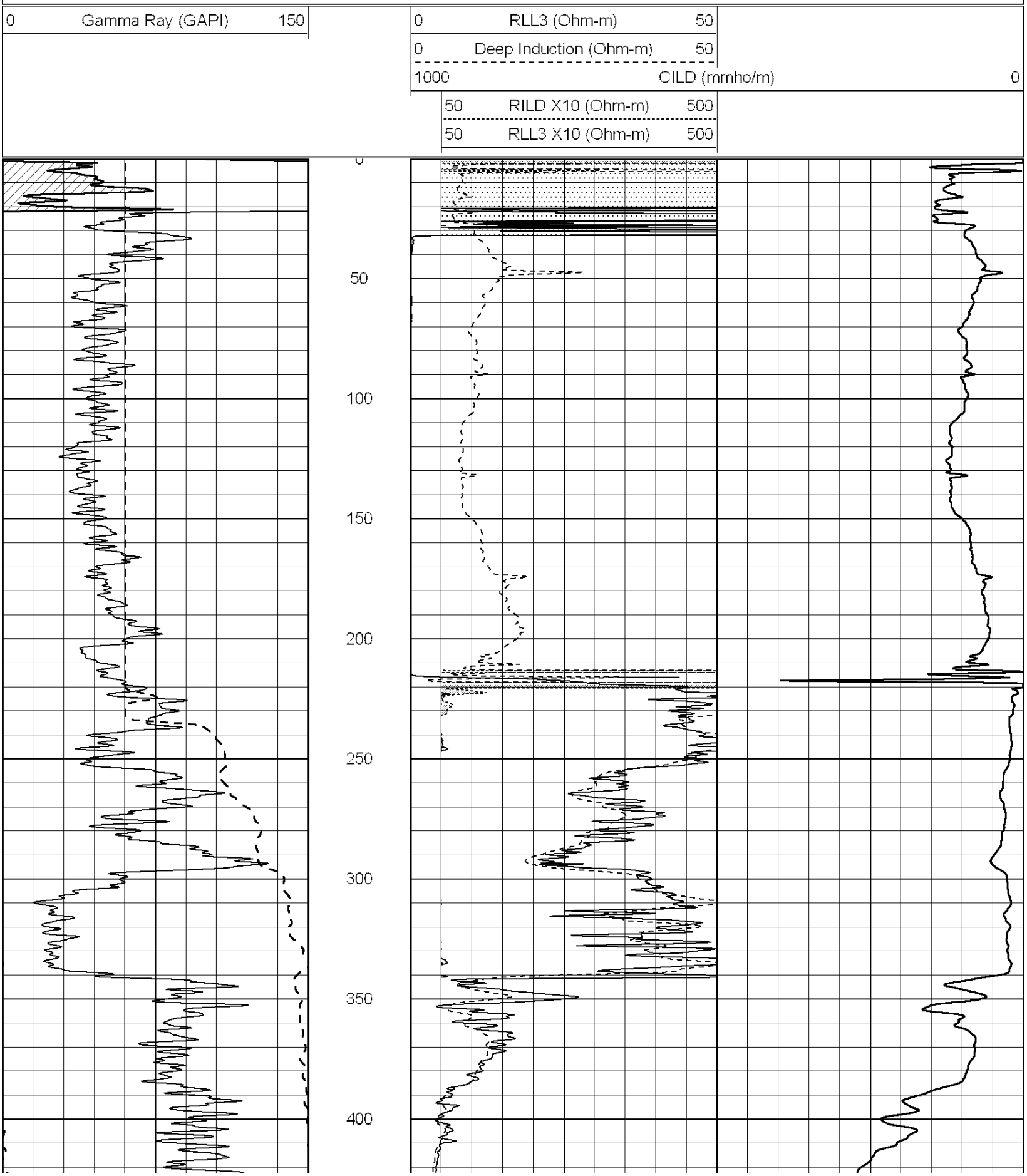
SUPERIOR WELL SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: OLD HIGHWAY #24 & LOGAN RD., (RD. #3), 2N, 1/2E, S & E INTO.

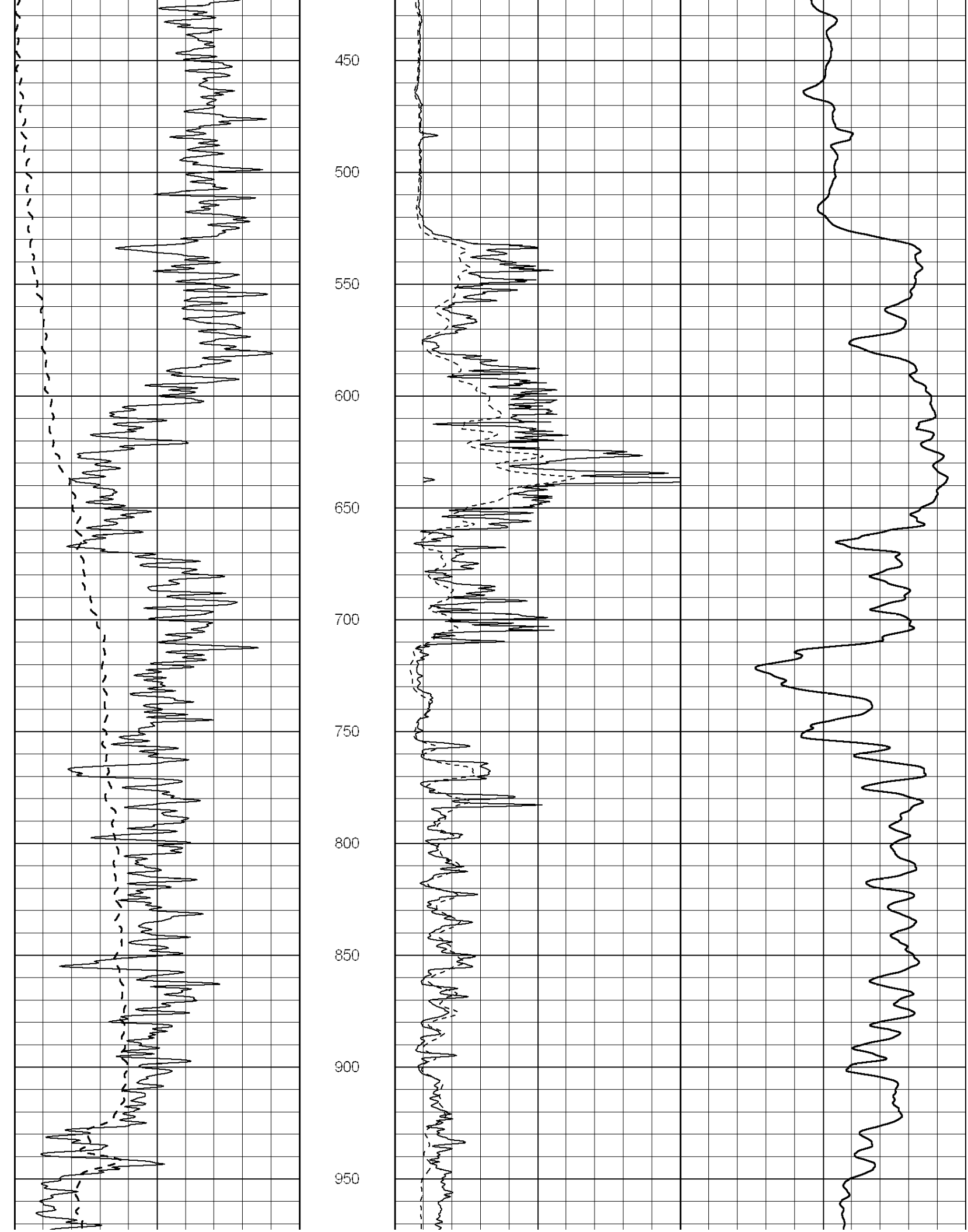
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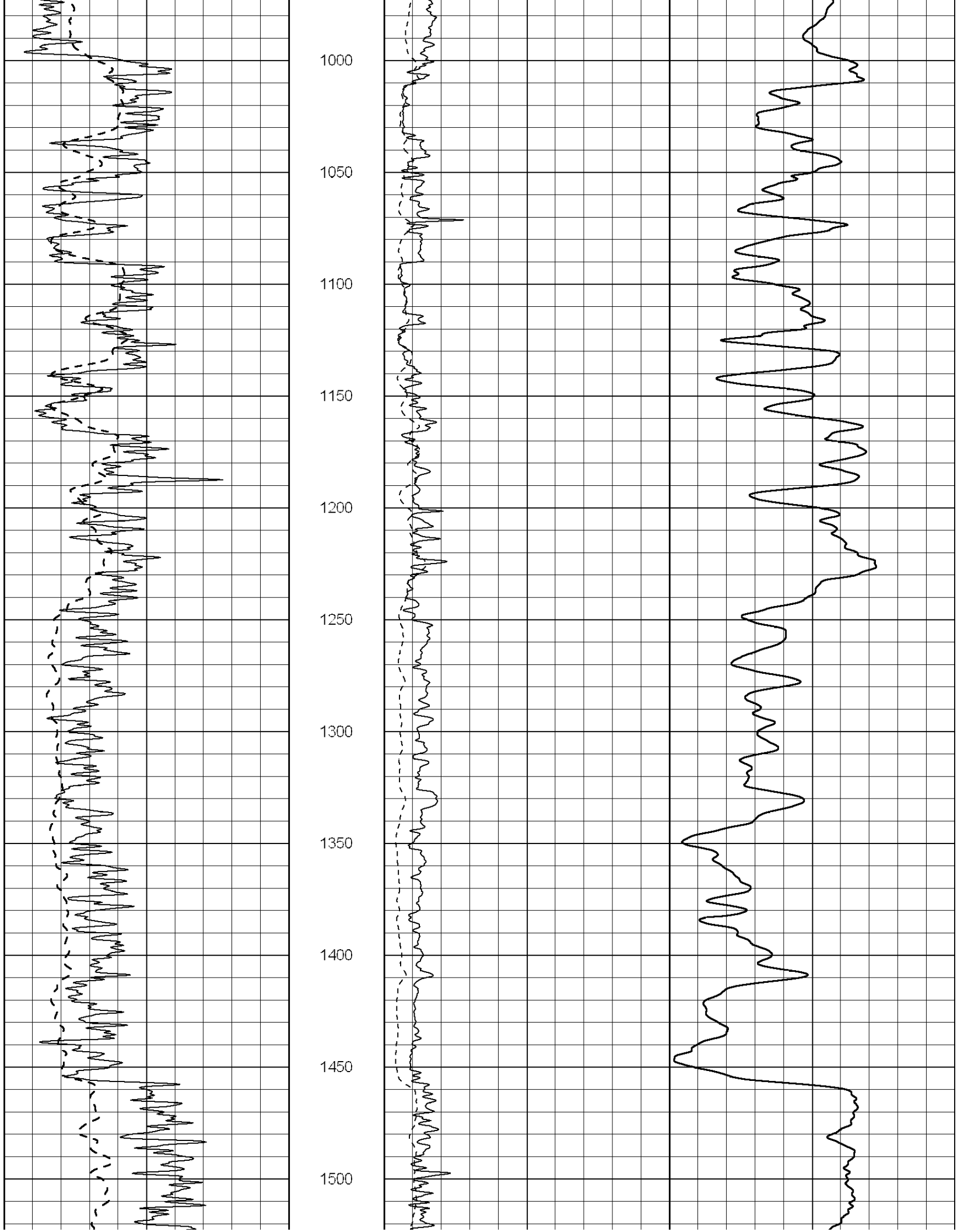
SUPERIOR
Hays,

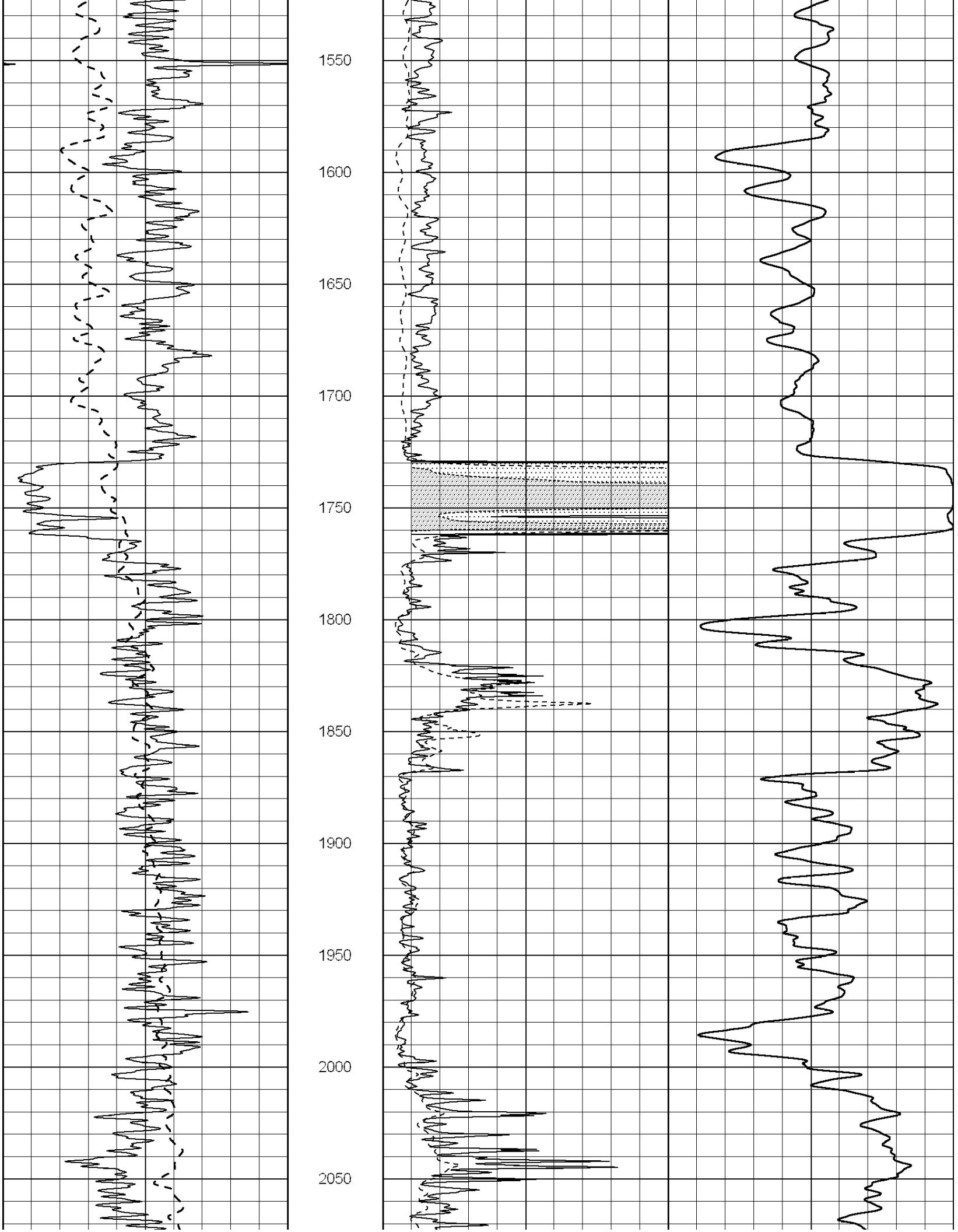
Kansas

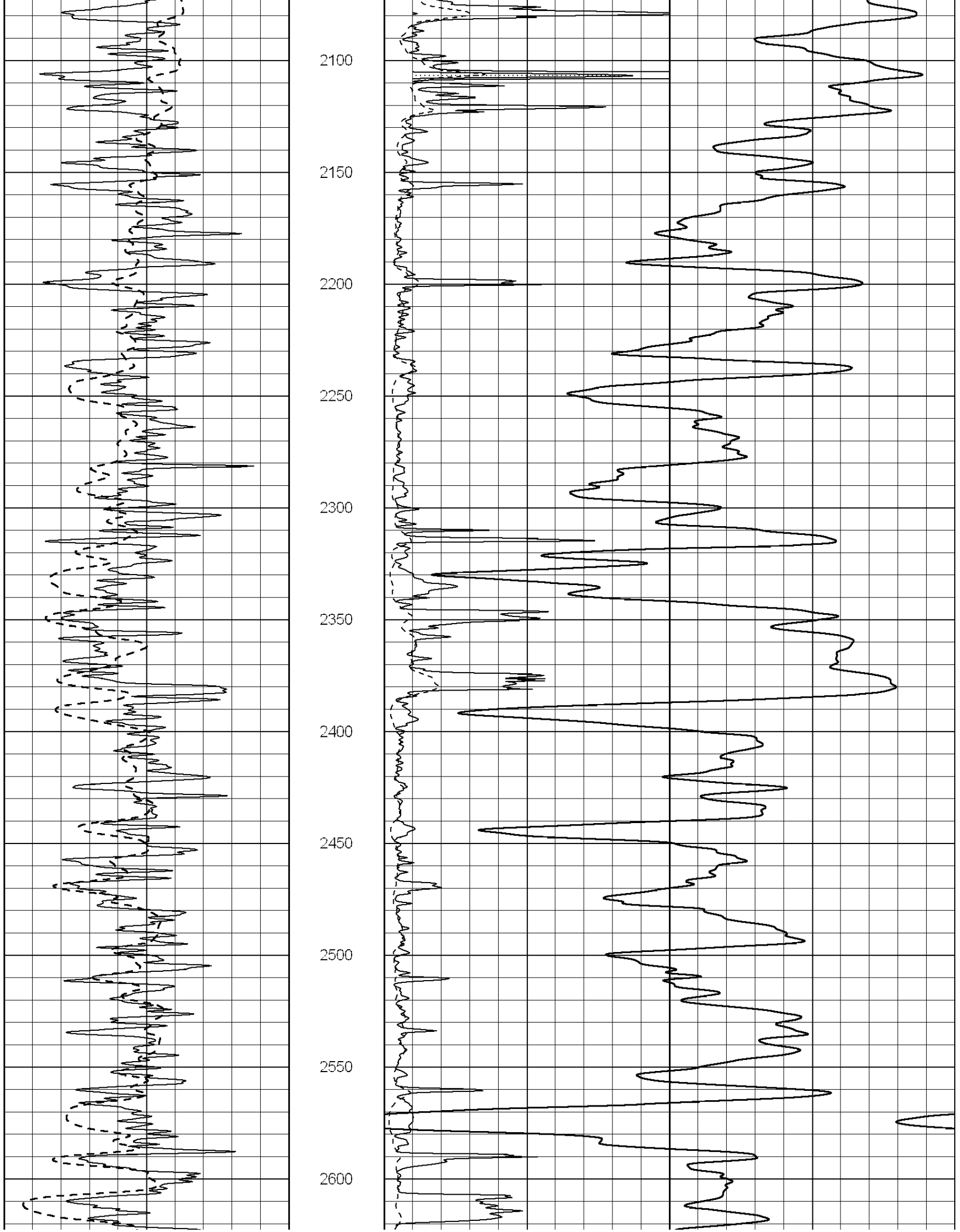
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Dataset Creation:	Mon May 21 23:38:49 2012
Charted by:	Depth in Feet scaled 1:600

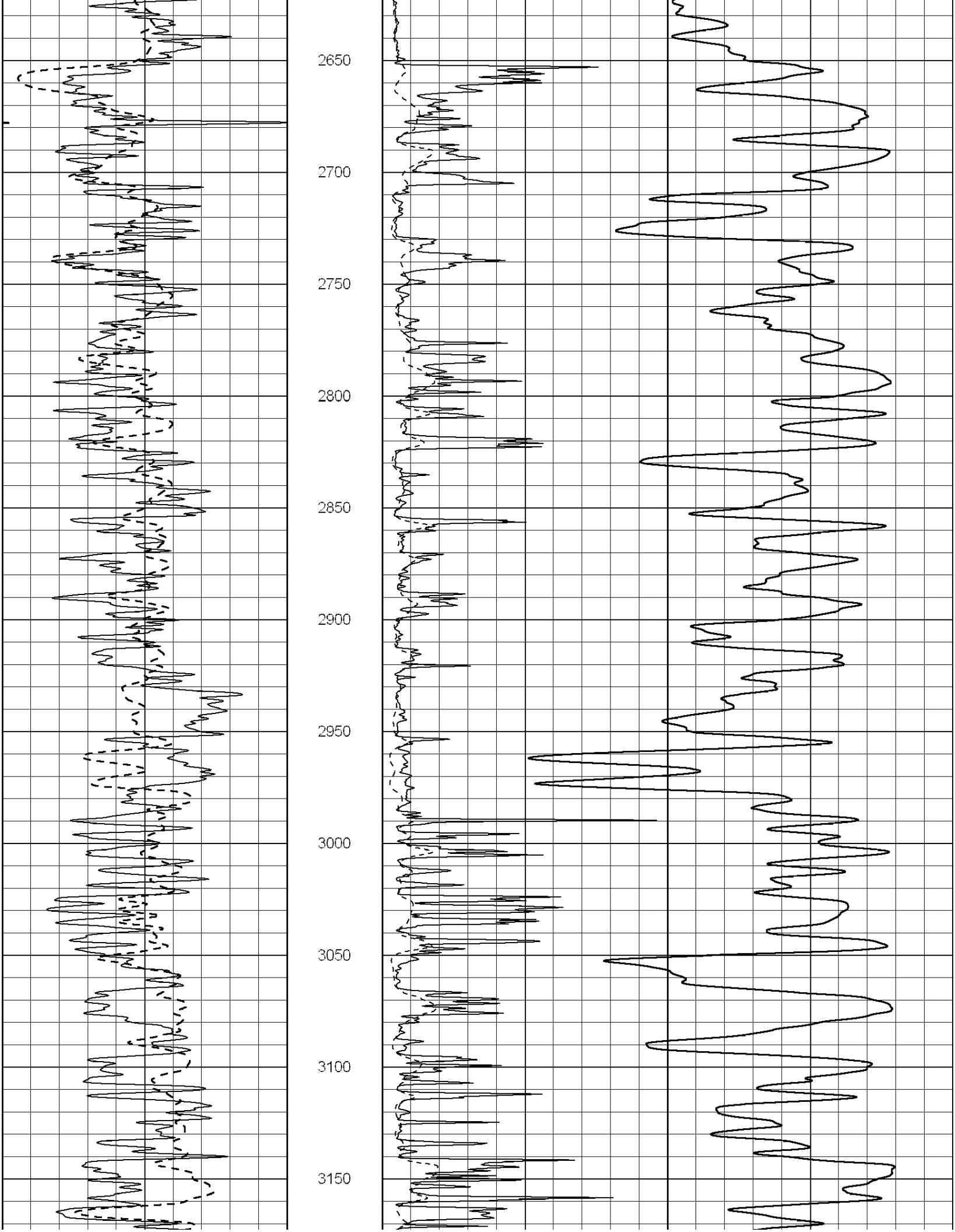


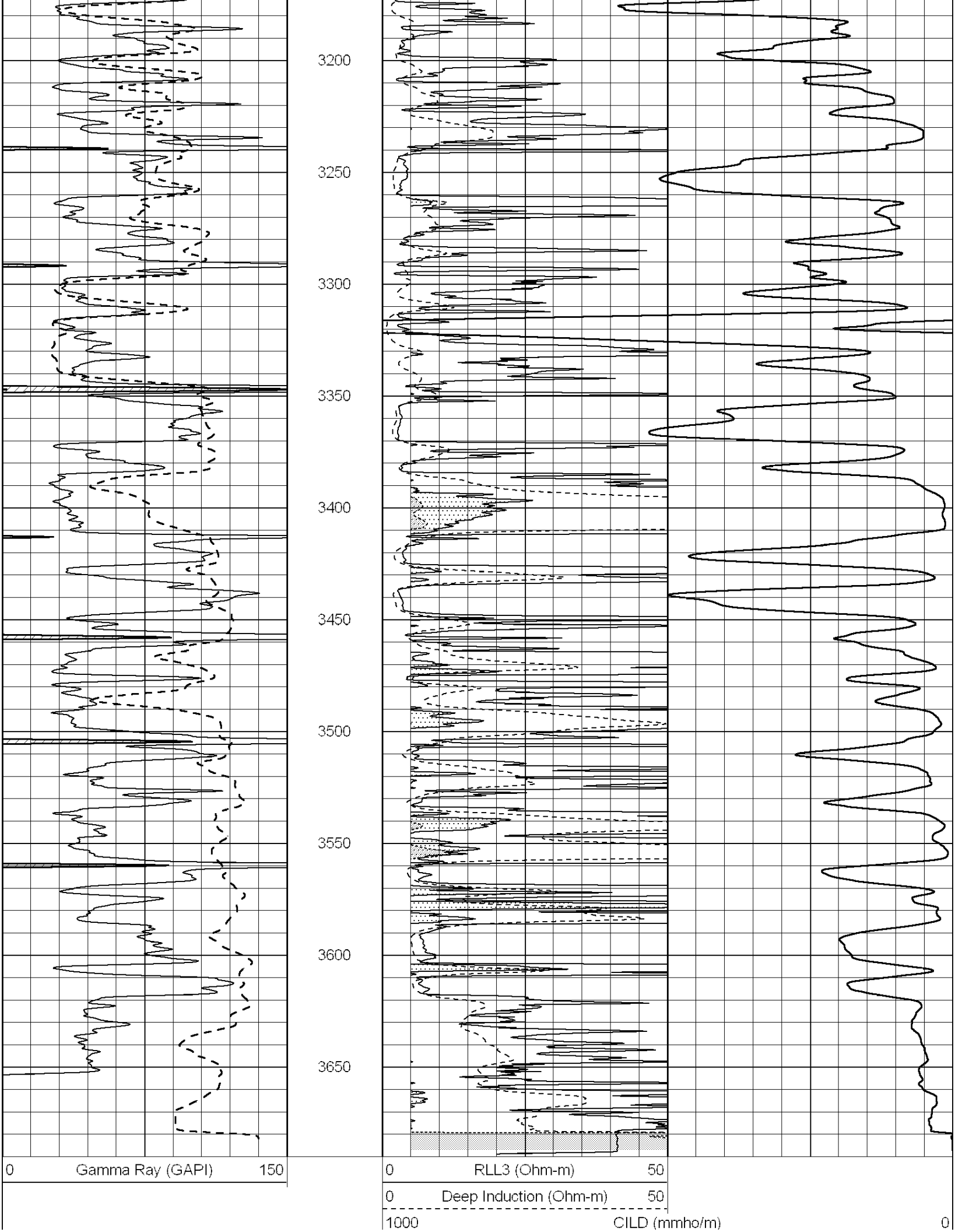

450
500
550
600
650
700
750
800
850
900
950


1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500


1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050


2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600


2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150


3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
0
Gamma Ray (GAPI)
150
0
RLL3 (Ohm-m)
50
0
Deep Induction (Ohm-m)
50
1000
CILD (mmho/m)
0

50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

SUPERIOR WELL SERVICES

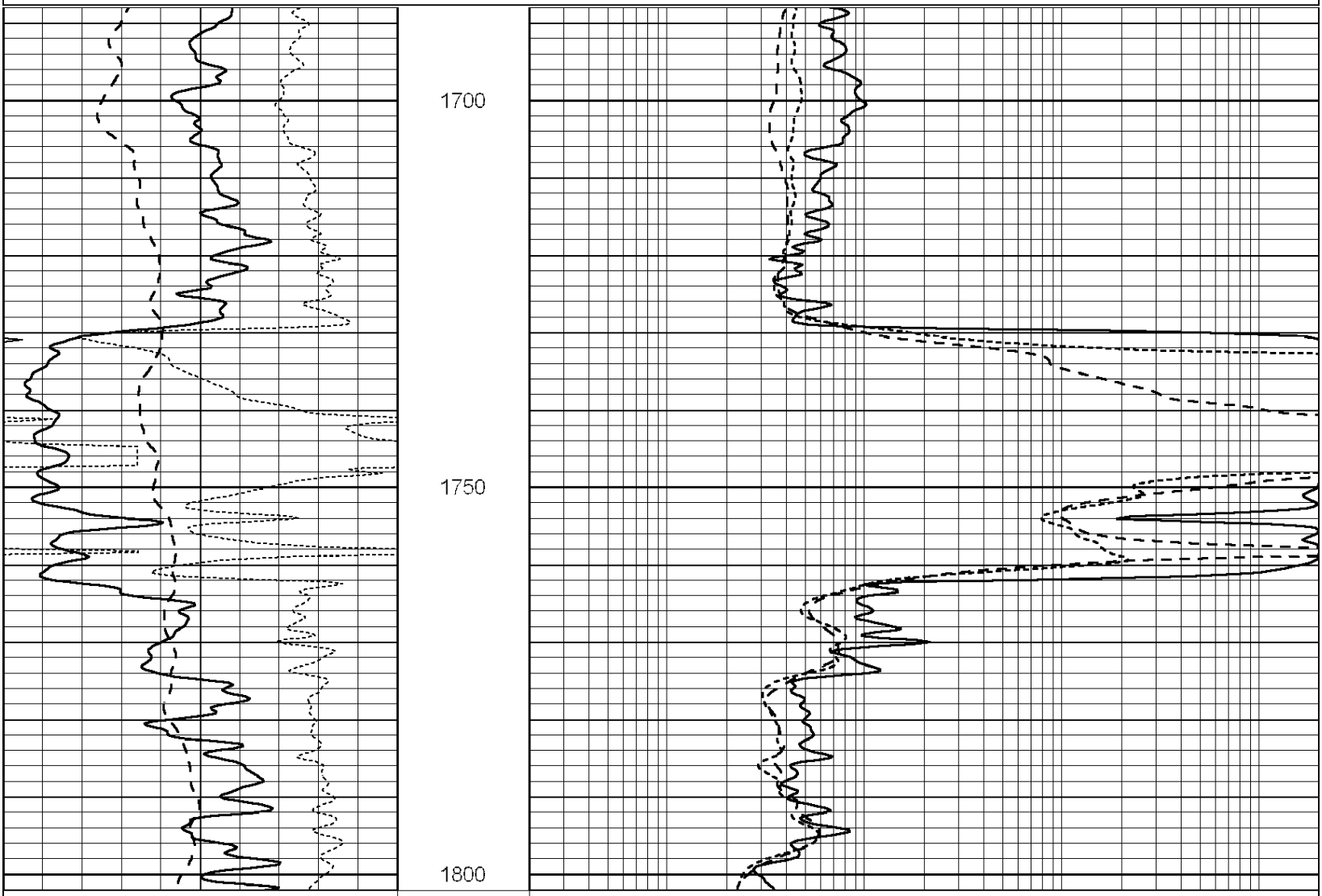
SUPERIOR
Hays,
Kansas

MAIN SECTION

Database File:	009122ddn.db
Dataset Pathname:	pass3.1A
Presentation Format:	dil
Dataset Creation:	Mon May 21 23:38:49 2012
Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (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	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

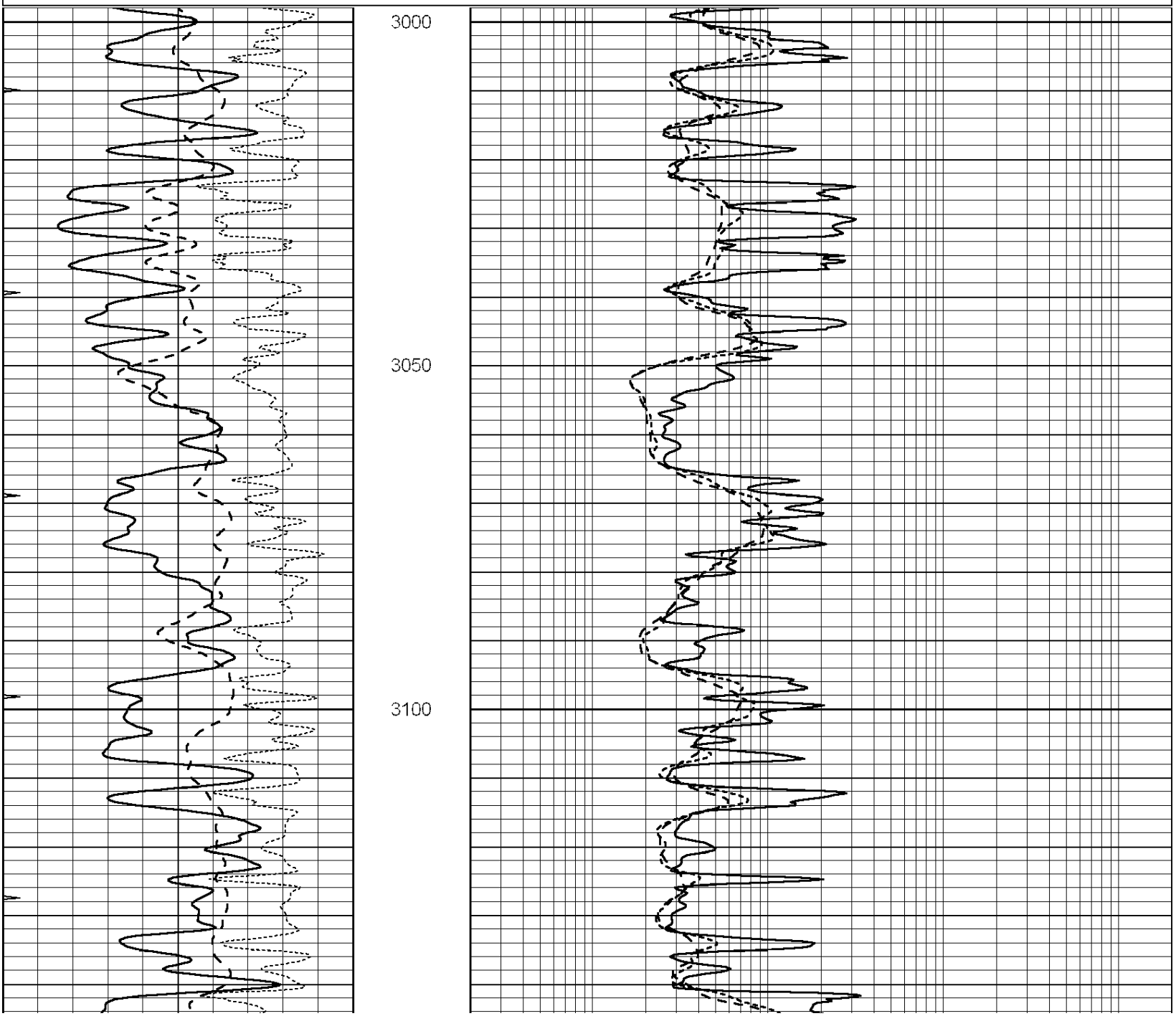
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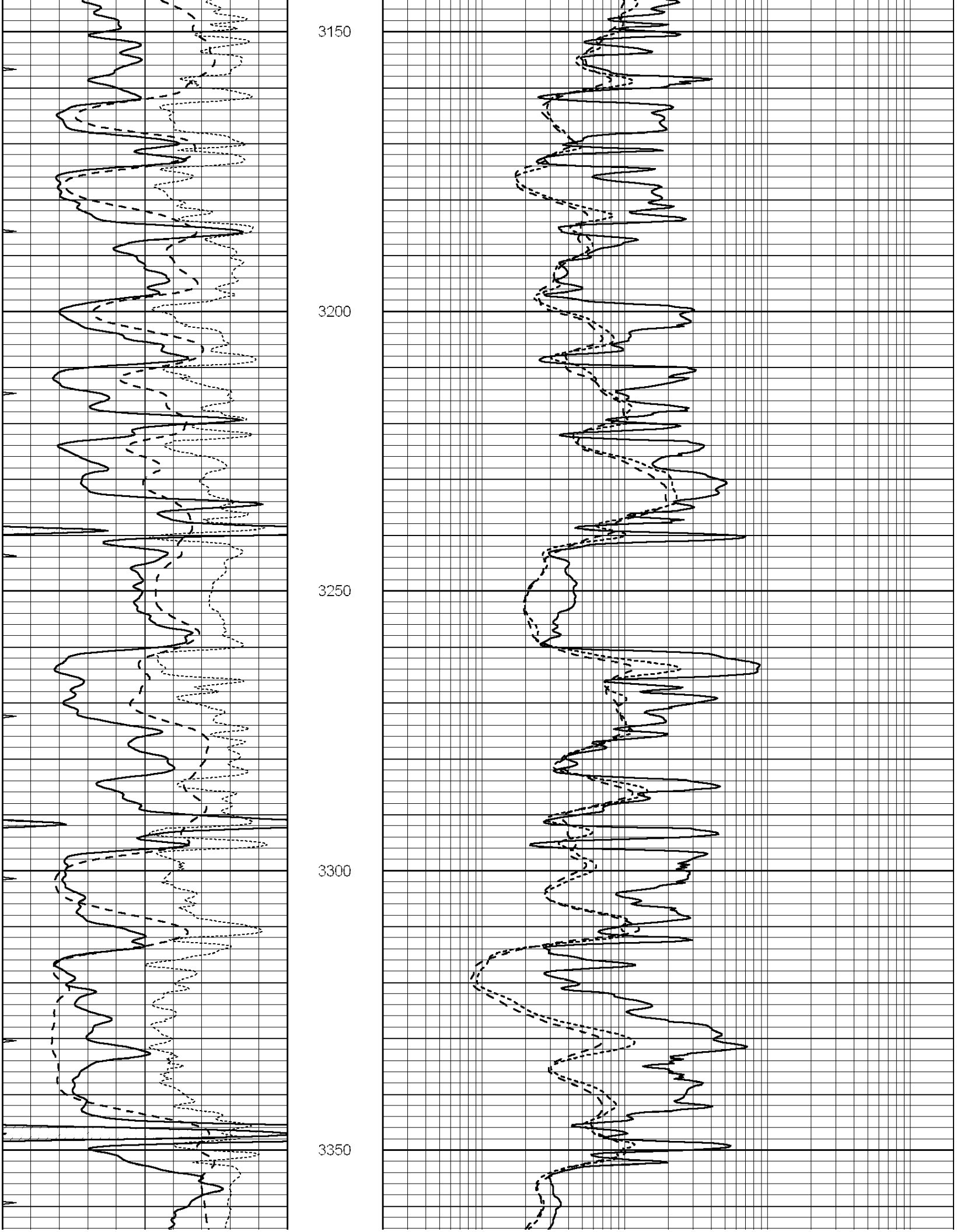
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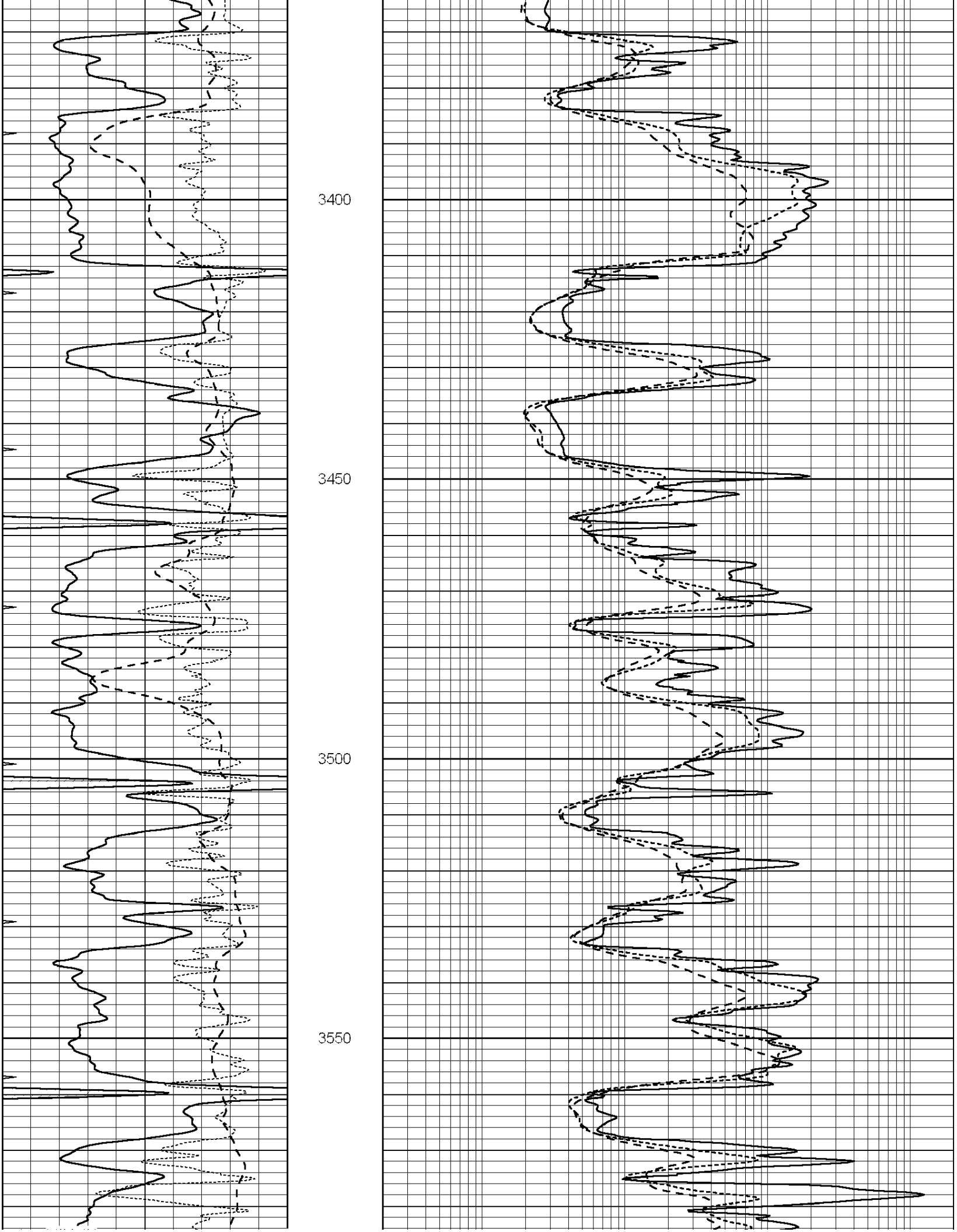
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Dataset Pathname:	pass3.1A
Presentation Format:	dil
Dataset Creation:	Mon May 21 23:38:49 2012
Charted by:	Depth in Feet scaled 1:240

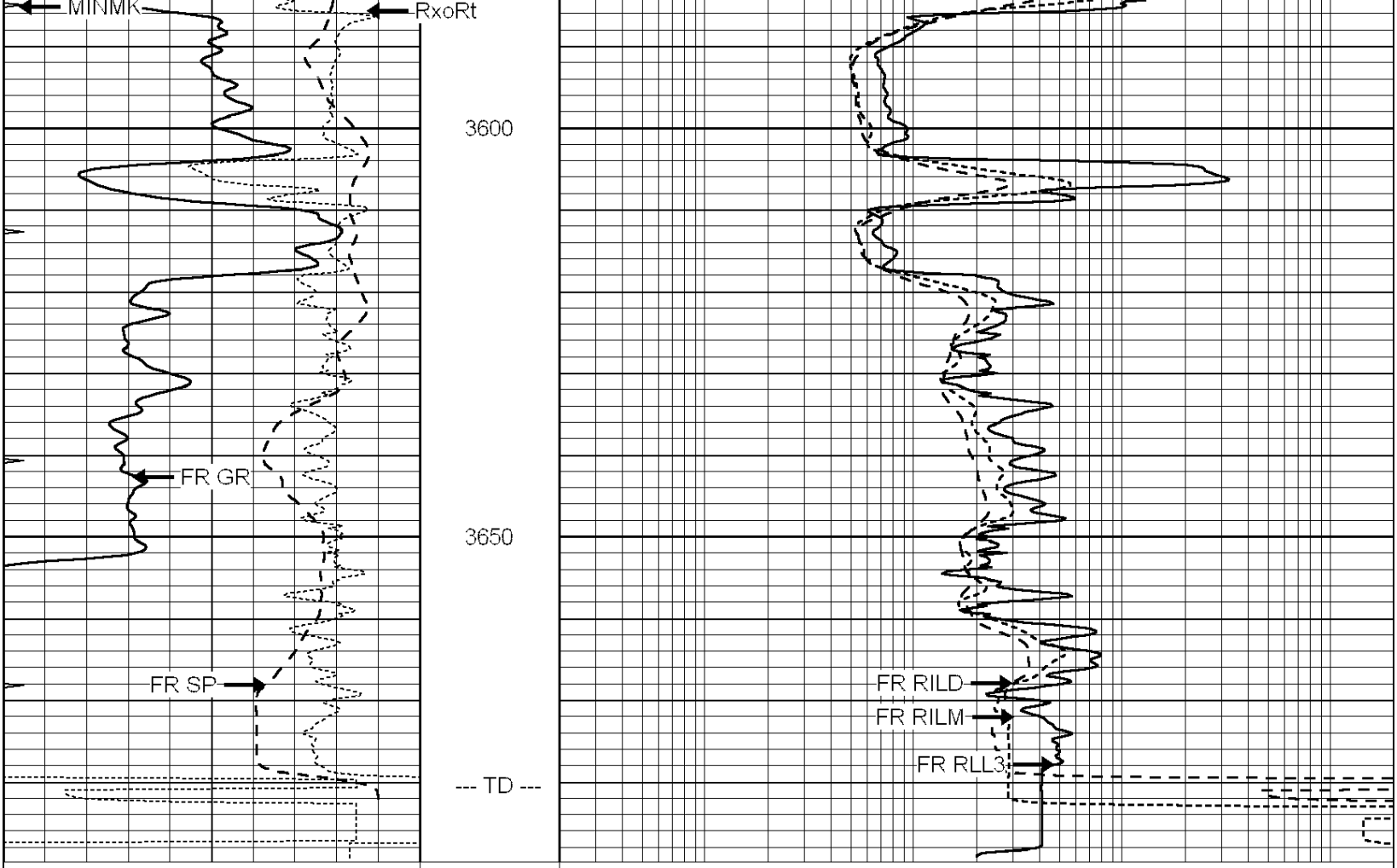
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000




3150
3200
3250
3300
3350


3400
3450
3500
3550



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

SUPERIOR WELL SERVICES

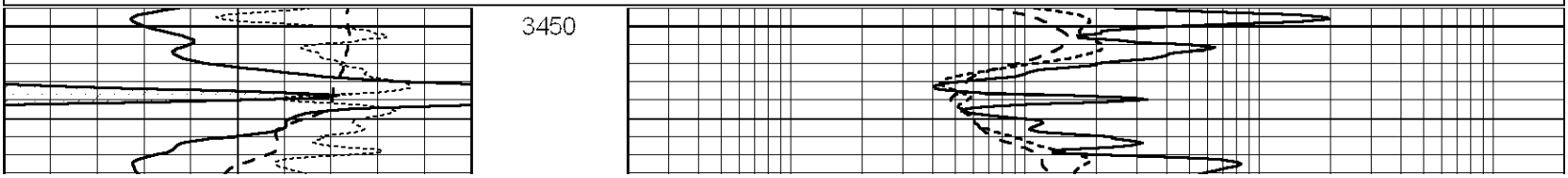
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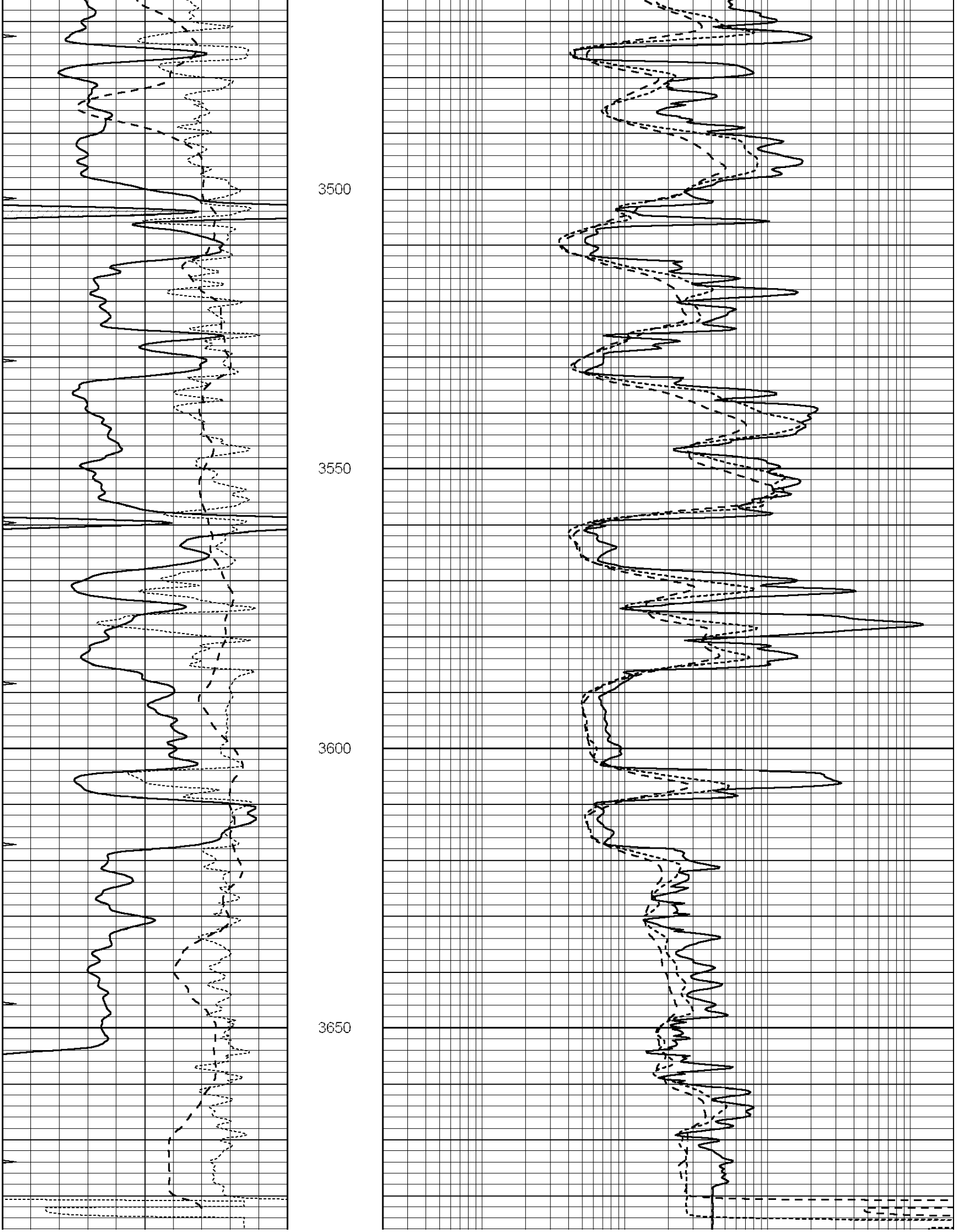
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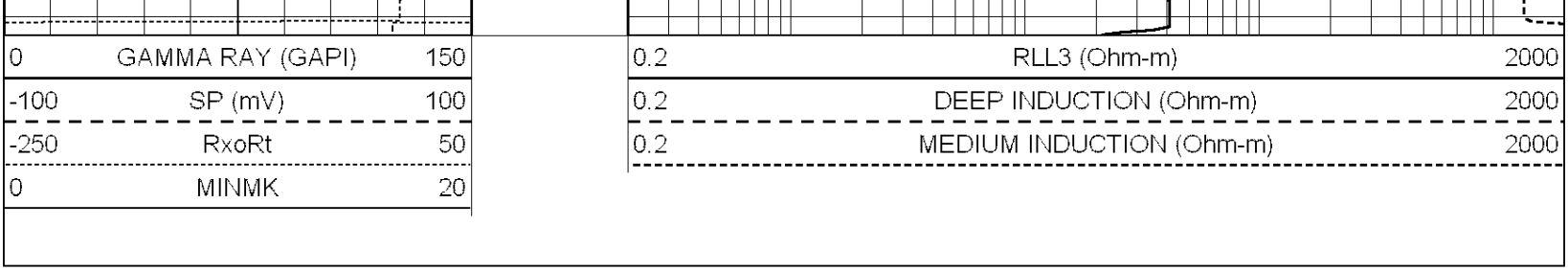
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Presentation Format:	dil
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Charted by:	Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000




3500
3550
3600
3650



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Database File: 009122ddn.db
Dataset Pathname: pass3.1A
Dataset Creation: Mon May 21 23:38:49 2012

Dual Induction Calibration Report

Serial-Model:	PROBE9-DILG
Surface Cal Performed:	Mon May 21 22:21:01 2012
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	550.000	-14.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	540.000	-18.000
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		3970.000	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		

Compensated Density Calibration Report

Serial-Model:	GEAR1-GEARHART
Source / Verifier:	147 / 147
Master Calibration Performed:	Mon May 21 22:04:25 2012

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	1243.76	629.14	cps

Aluminum	2.590	g/cc	282.16	435.01	cps

Spine Angle = 76.03 Density/Spine Ratio = 0.576

	Size		Reading	
Small Ring	8.40	in	4.01	V
Large Ring	14.00	in	5.67	V

Compensated Neutron Calibration Report

Serial Number: NUE_2I
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:	Mon May 21 22:04:07 2012	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.7000	GAPI/cps