NABORS
COMPLETION & PRODUCTION SERVICES CO.

DUAL INDUCTION LOG

Company RITCHIE EXPLORATION, INC.
Well HUSEMAN 20B #1
Field WILDCAT
County SCOTT State KANSAS

Location: API # : 15-171-20968
485' FNL & 1180' FWL
SEC 20 TWP 16S RGE 31W

Other Services
CNL/CDL

Elevation
K.B. 2943
D.F. 2941
G.L. 2938

Permanent Datum GROUND LEVEL Elevation 2938
Log Measured From KELLY BUSHING 5' A.G.L.
Drilling Measured From KELLY BUSHING

Date	8/18/13		
Run Number	ONE		
Depth Driller	4770		
Depth Logger	4772		
Bottom Logged Interval	4770		
Top Log Interval	00		
Casing Driller	225		
Casing Logger	224		
Bit Size	7.875		
Type Fluid in Hole	CHEMICAL MUD		
Density / Viscosity	9.4 / 51		
pH / Fluid Loss	10 / 9.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.75 @ 95F		
Rmf @ Meas. Temp	0.56 @ 95F		
Rmc @ Meas. Temp	0.90 @ 95F		
Source of Rmf / Rmc	MEASURED		
Rm @ BHT	0.63 @ 123F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom			
Maximum Recorded Temperature	123F		
Equipment Number	860		
Location	HAYS, KS.		
Recorded By	IAN MABB		
Witnessed By	KIM SHOEMAKER		

Company RITCHIE EXPLORATION, INC.
Well HUSEMAN 20B #1
Field WILDCAT
County SCOTT
State KANSAS

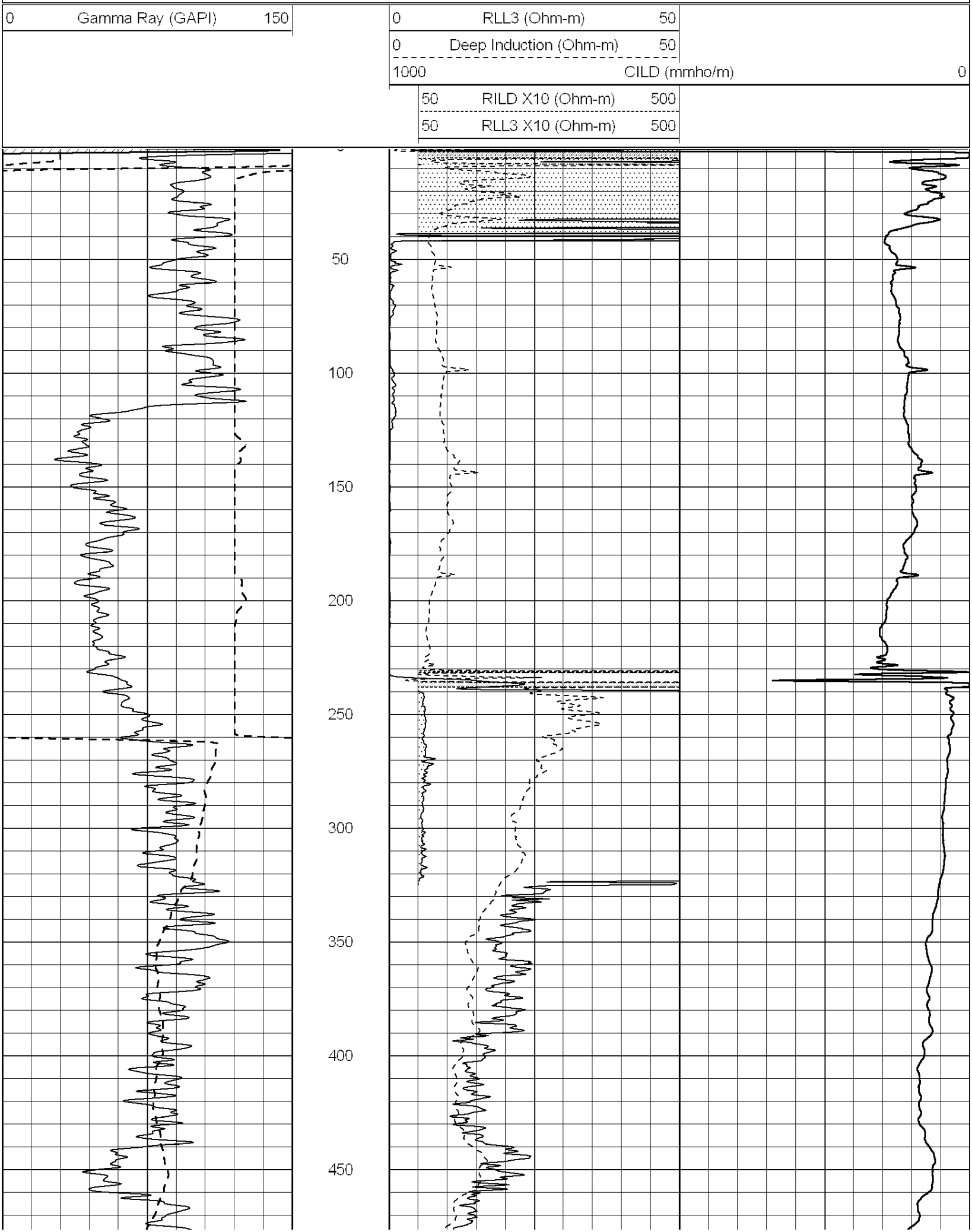
<<< Fold Here >>>

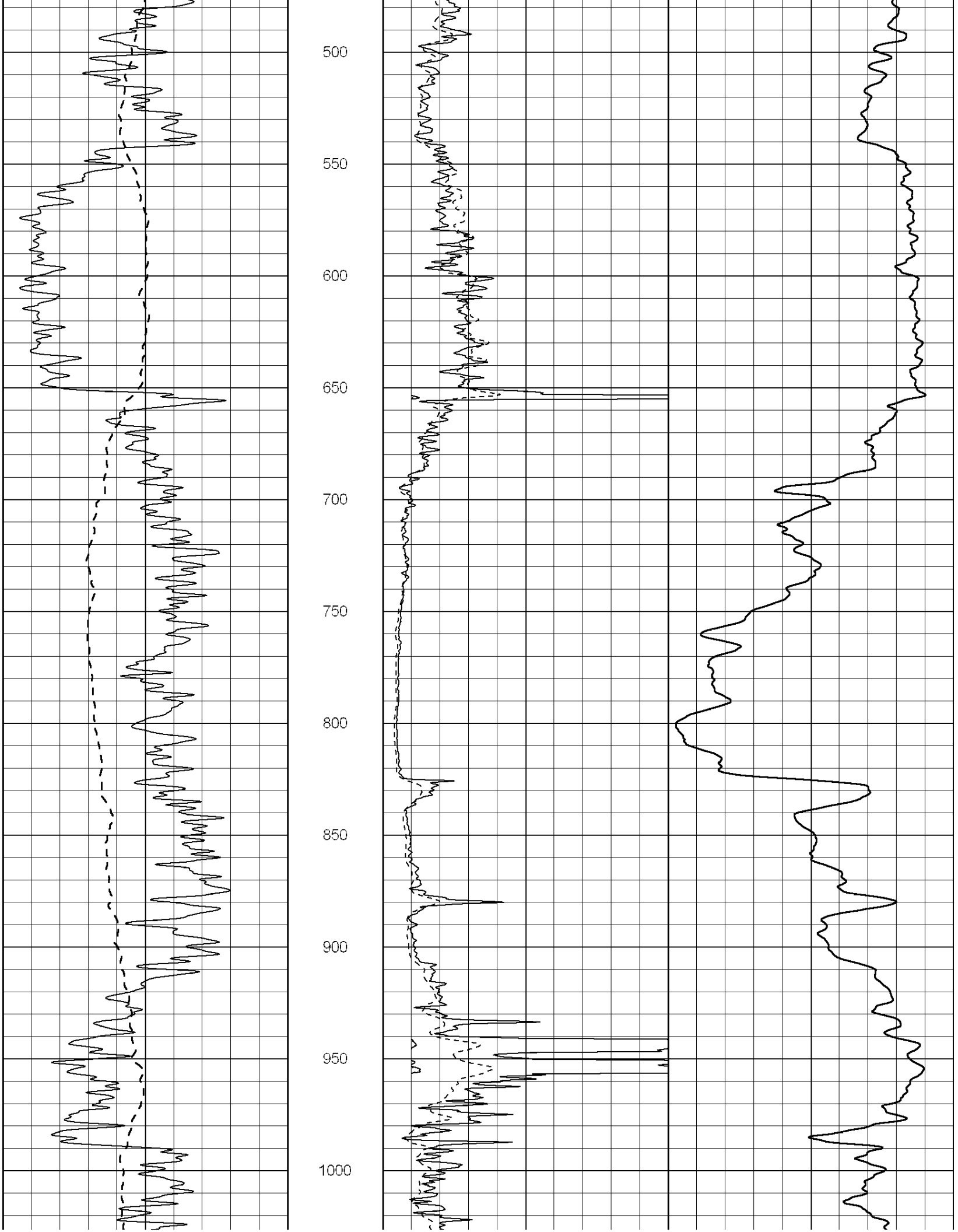
Comments

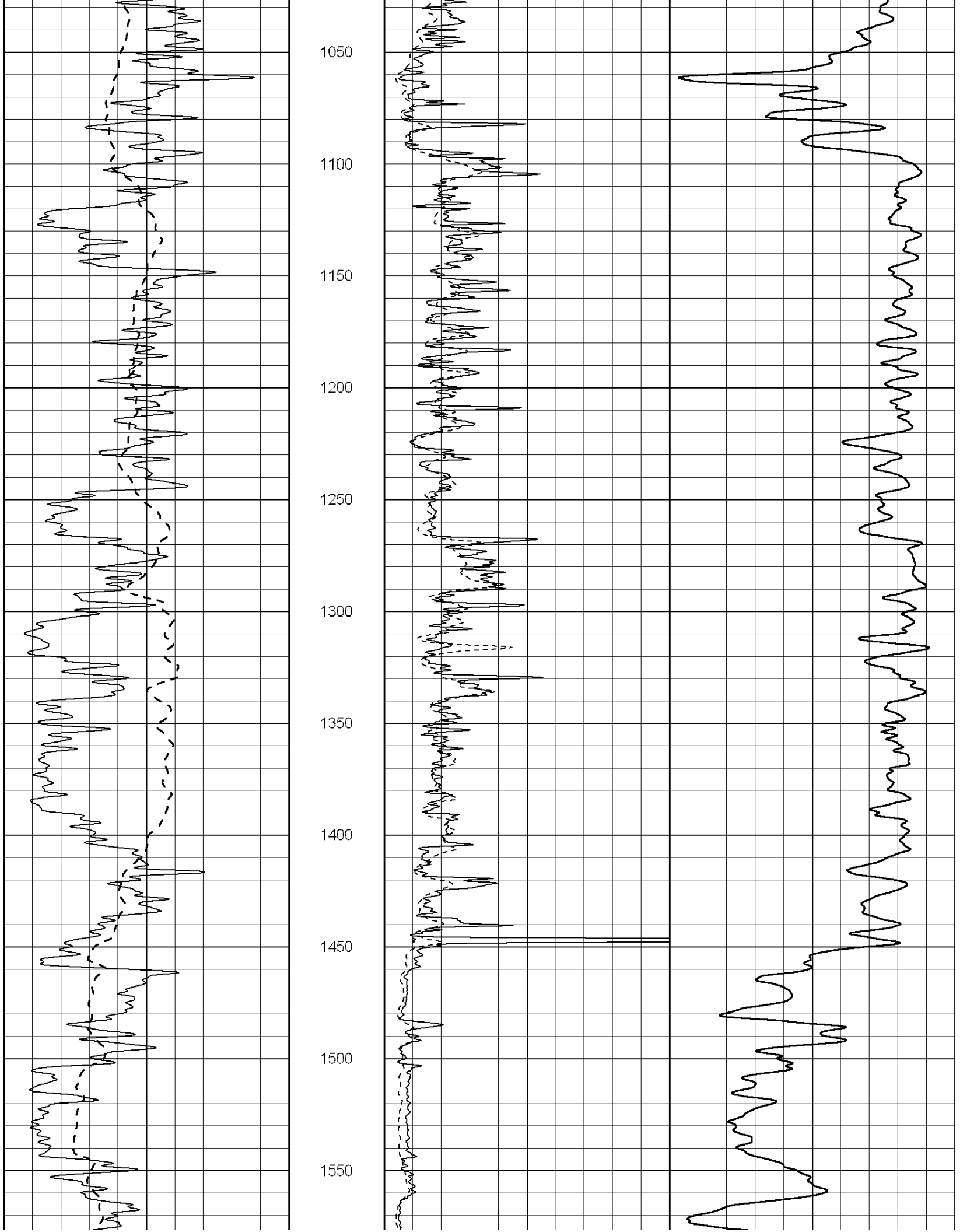
NABORS COMPLETION & PRODUCTION SERVICES
785-628-6395
THANK YOU FOR YOUR BUSINESS
DIRECTIONS: HEALY, KS. - 8 MILES WEST TO TAOS RD. - NORTH 4 MILES WEST INTO

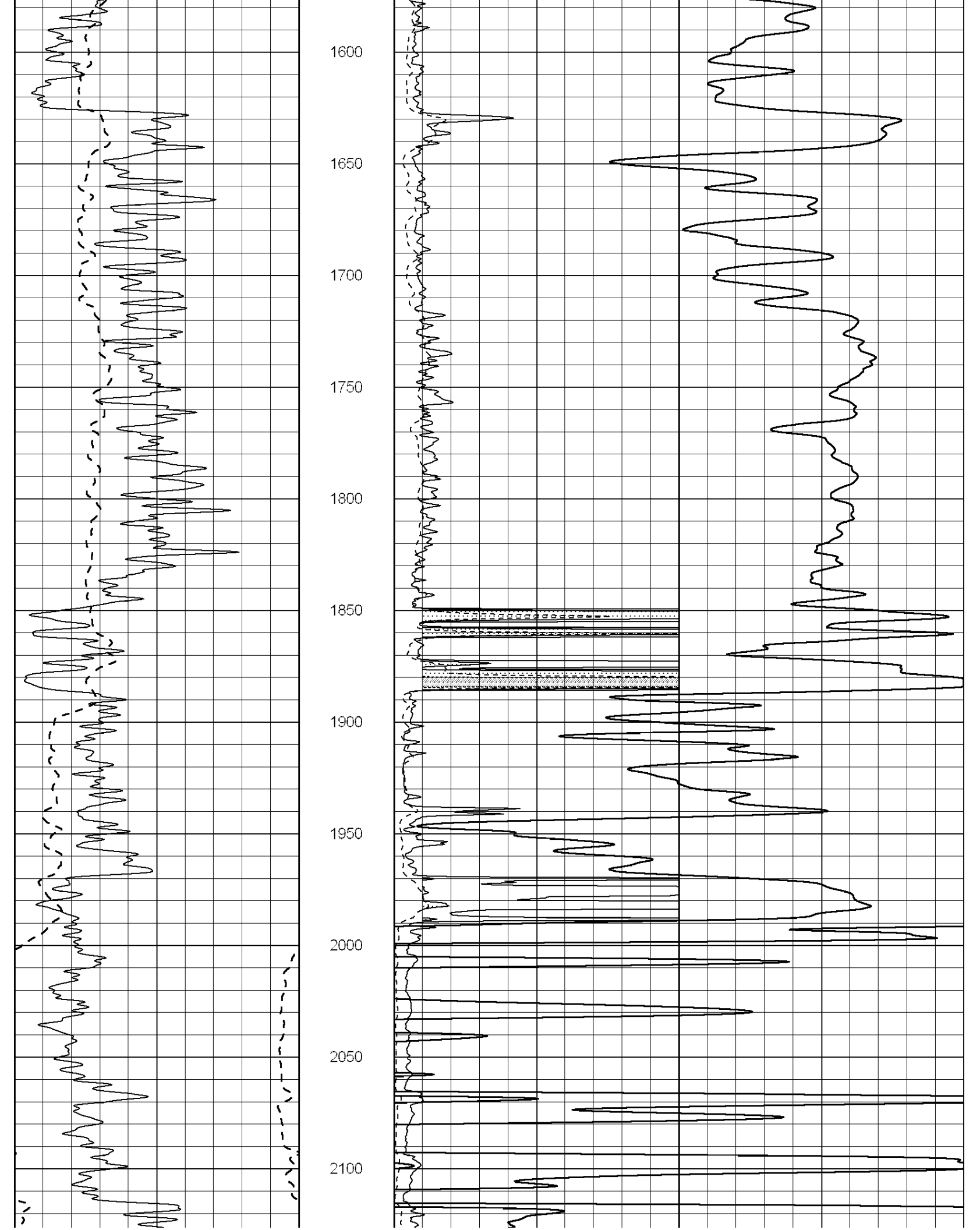
Database File: 011706ddn.db
Dataset Pathname: pass3.4
Presentation Format: _dil2
Dataset Creation: Sun Aug 18 17:16:43 2013 by Calc Open-Cased 090629

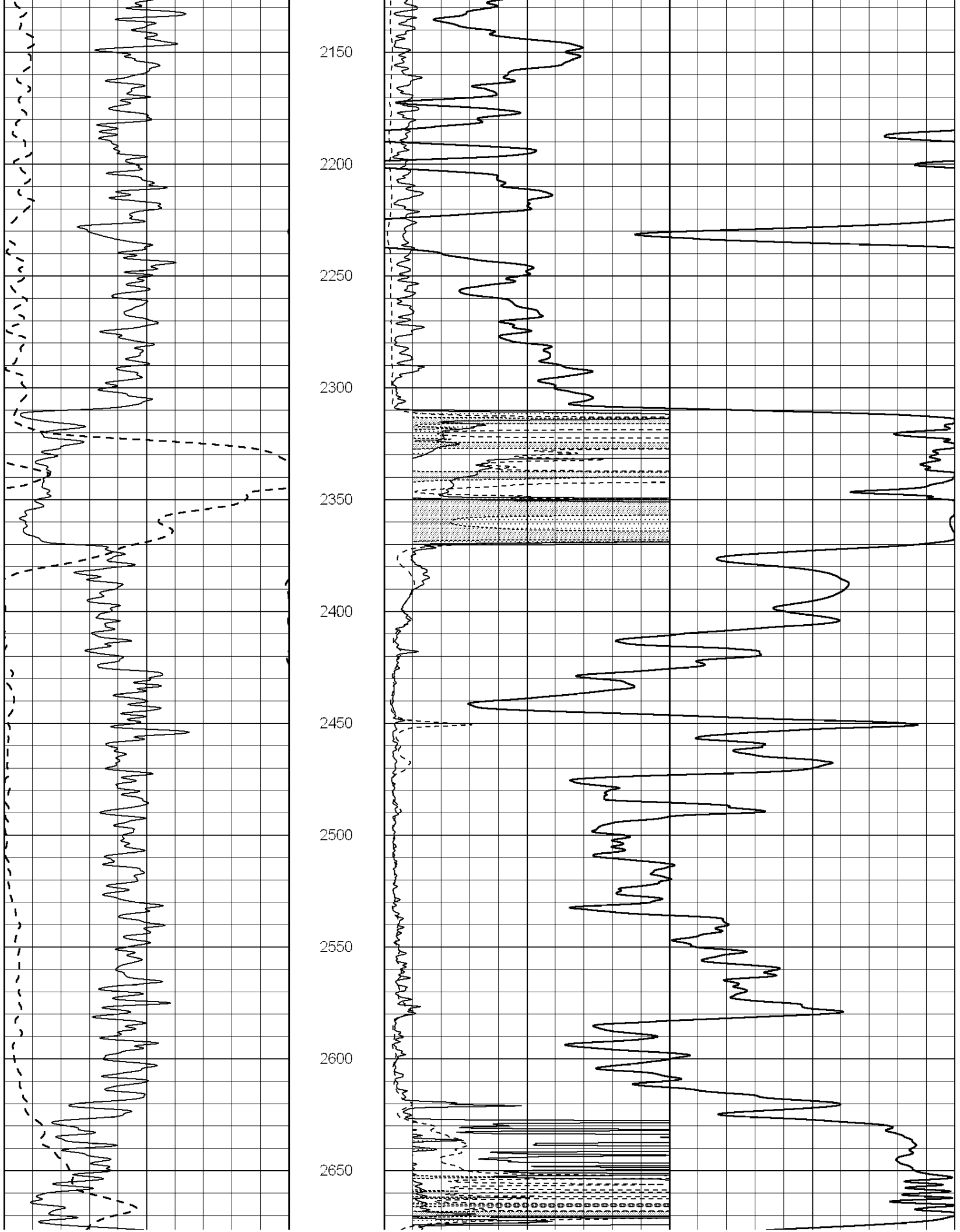
Charted by: Depth in Feet scaled 1:600

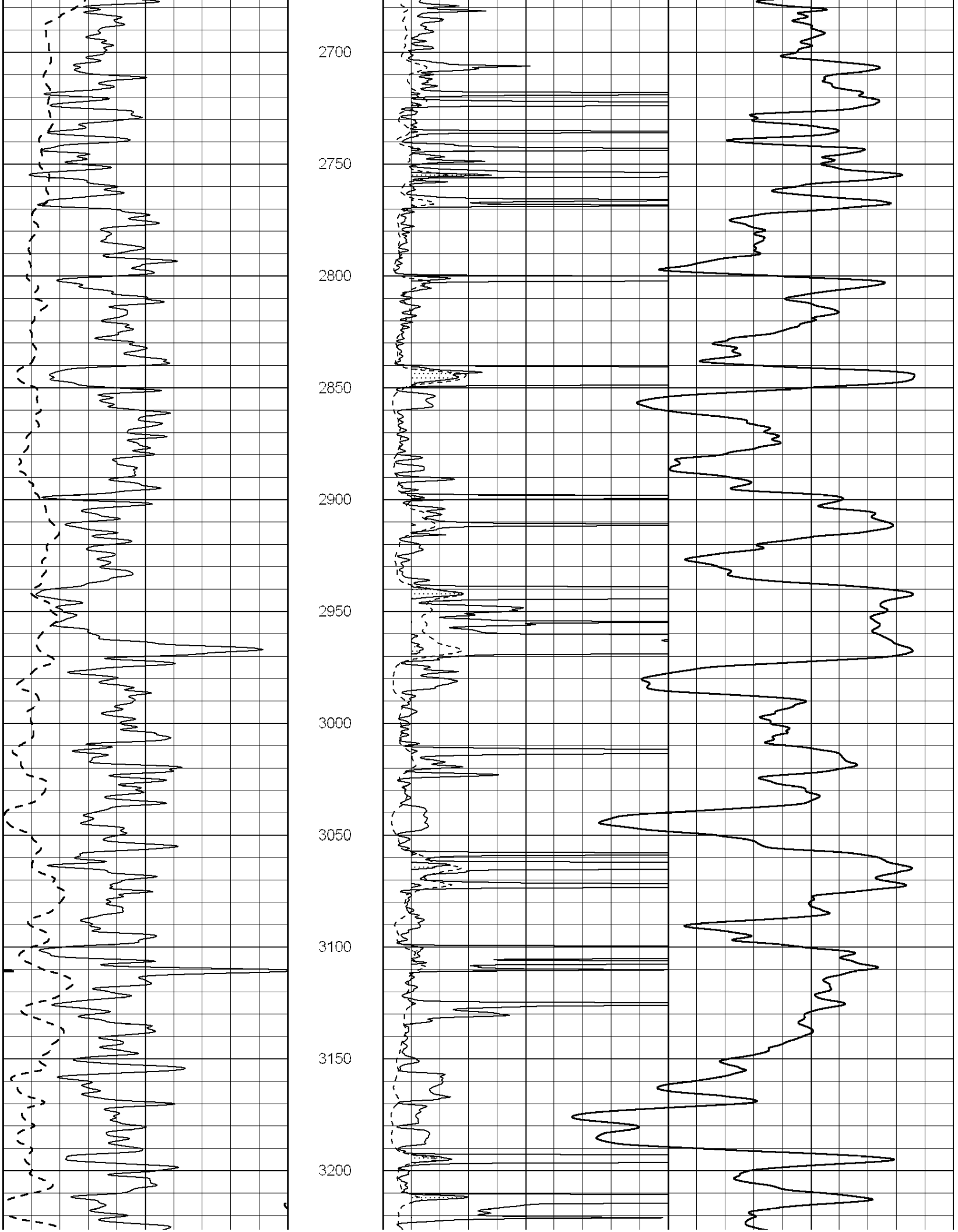


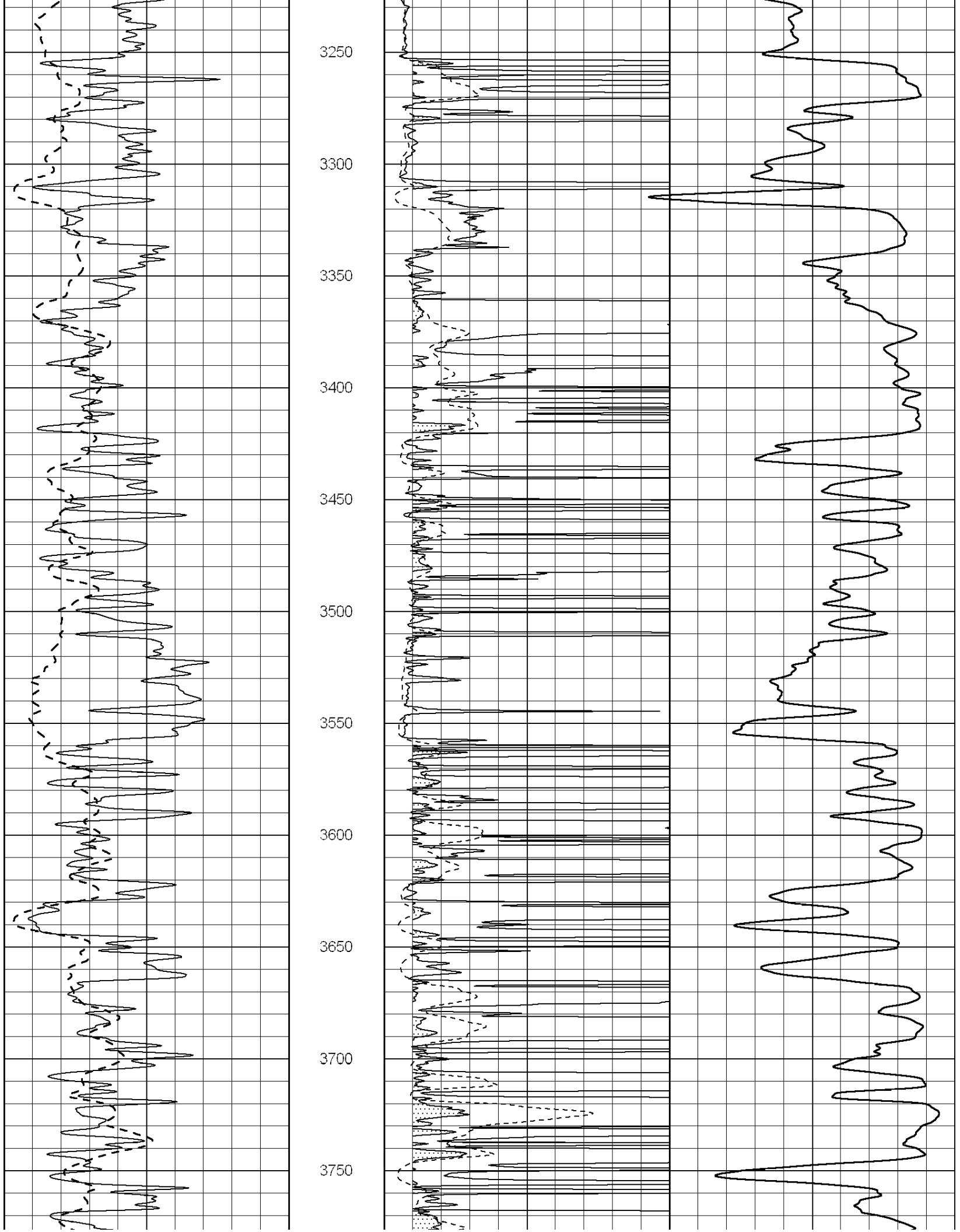

500
550
600
650
700
750
800
850
900
950
1000

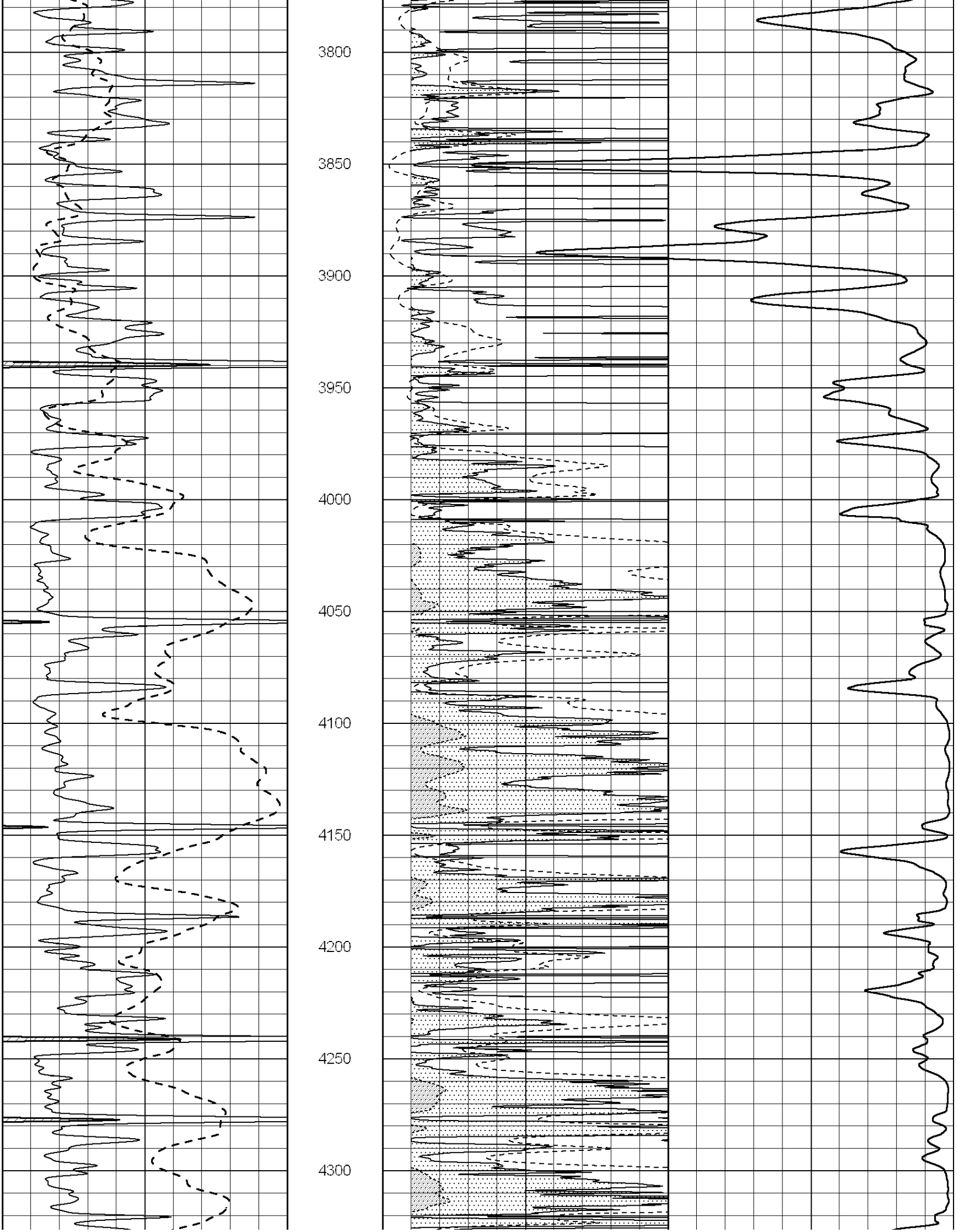

1050
1100
1150
1200
1250
1300
1350
1400
1450
1500
1550

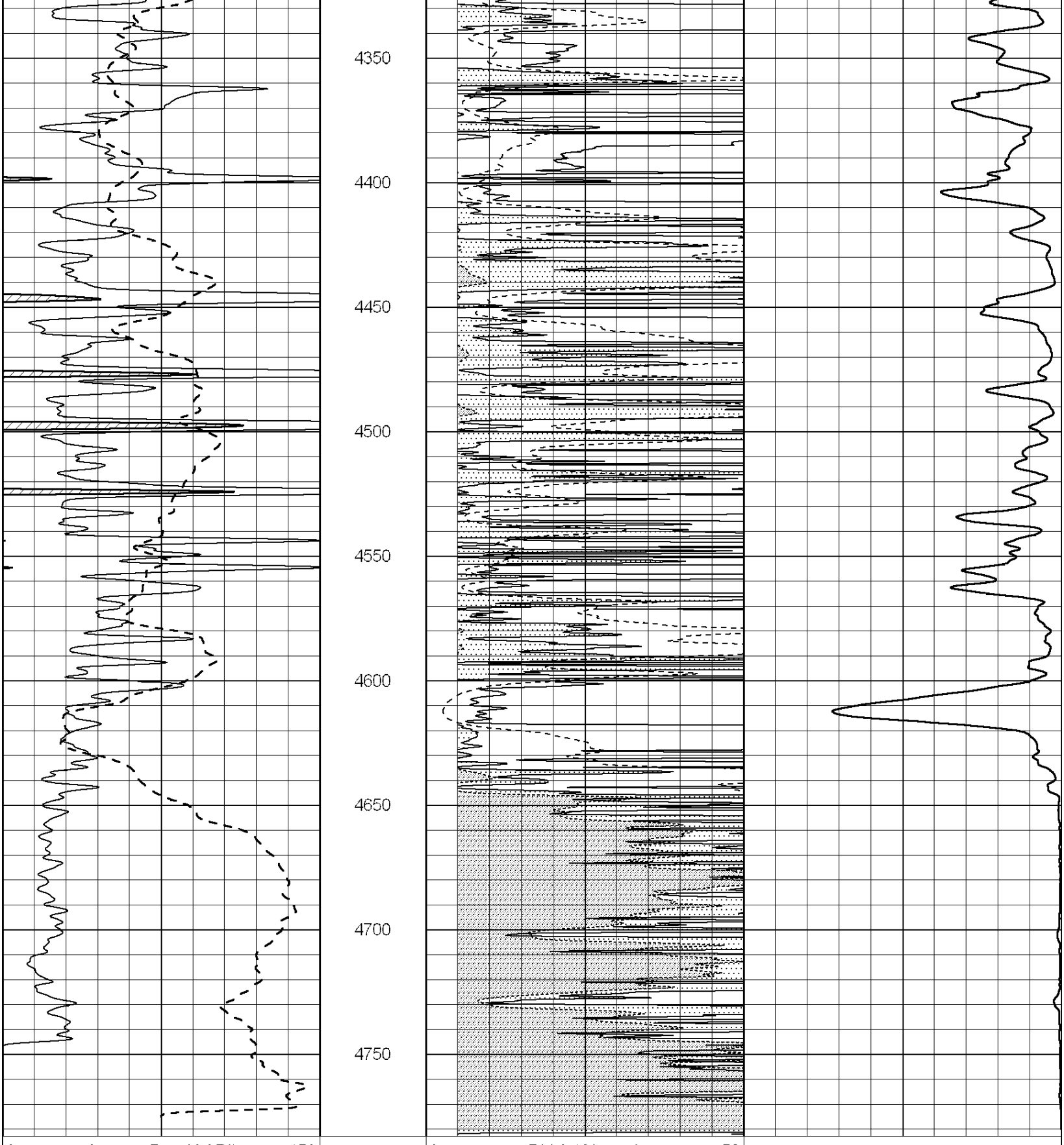

1600
1650
1700
1750
1800
1850
1900
1950
2000
2050
2100


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
3700
3750


3800
3850
3900
3950
4000
4050
4100
4150
4200
4250
4300

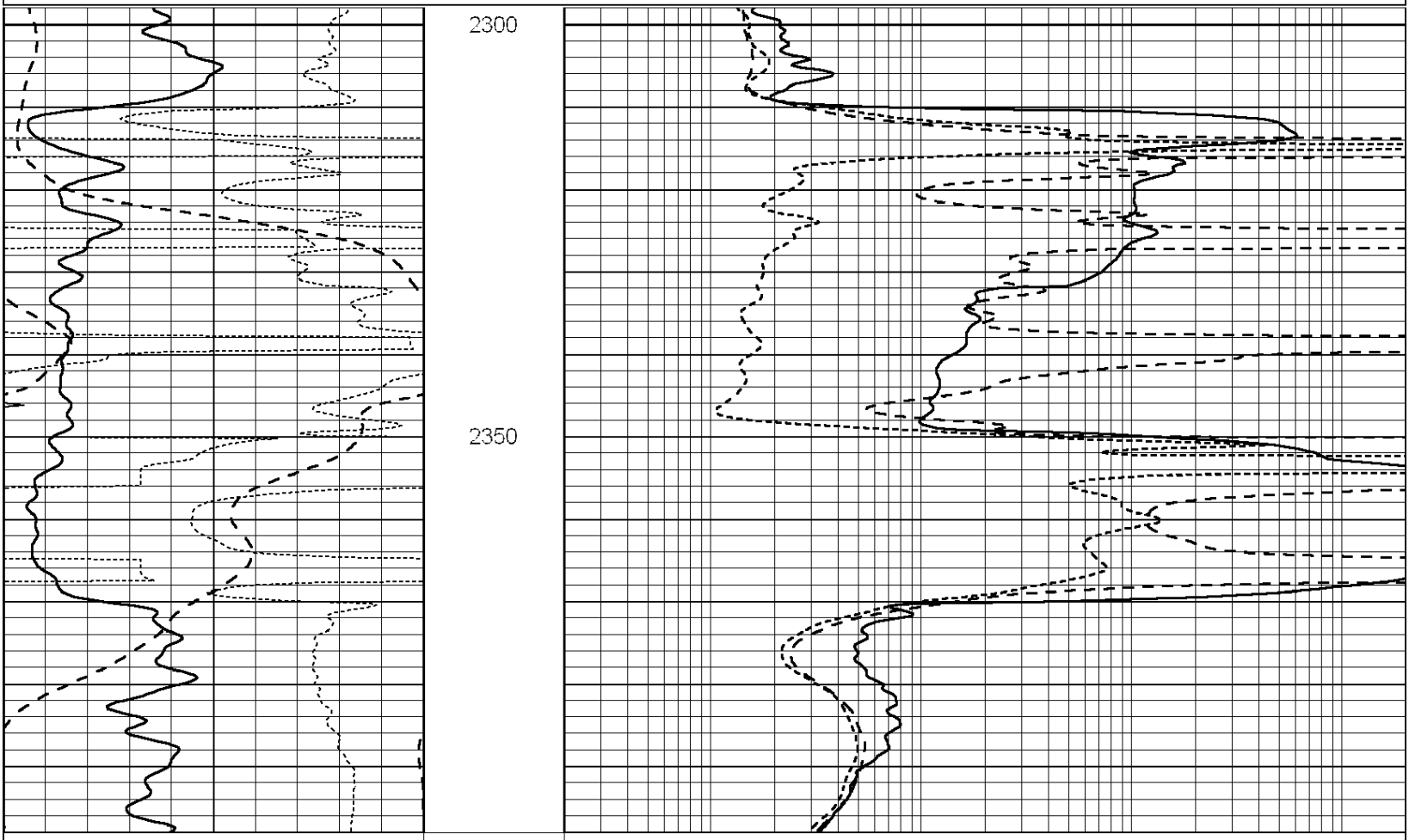


Database File: 011706ddn.db
Dataset Pathname: pass3.3

Database File: 011706ddn.db
Dataset Pathname: pass3.3
Presentation Format: _dil
Dataset Creation: Sun Aug 18 16:33:29 2013
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



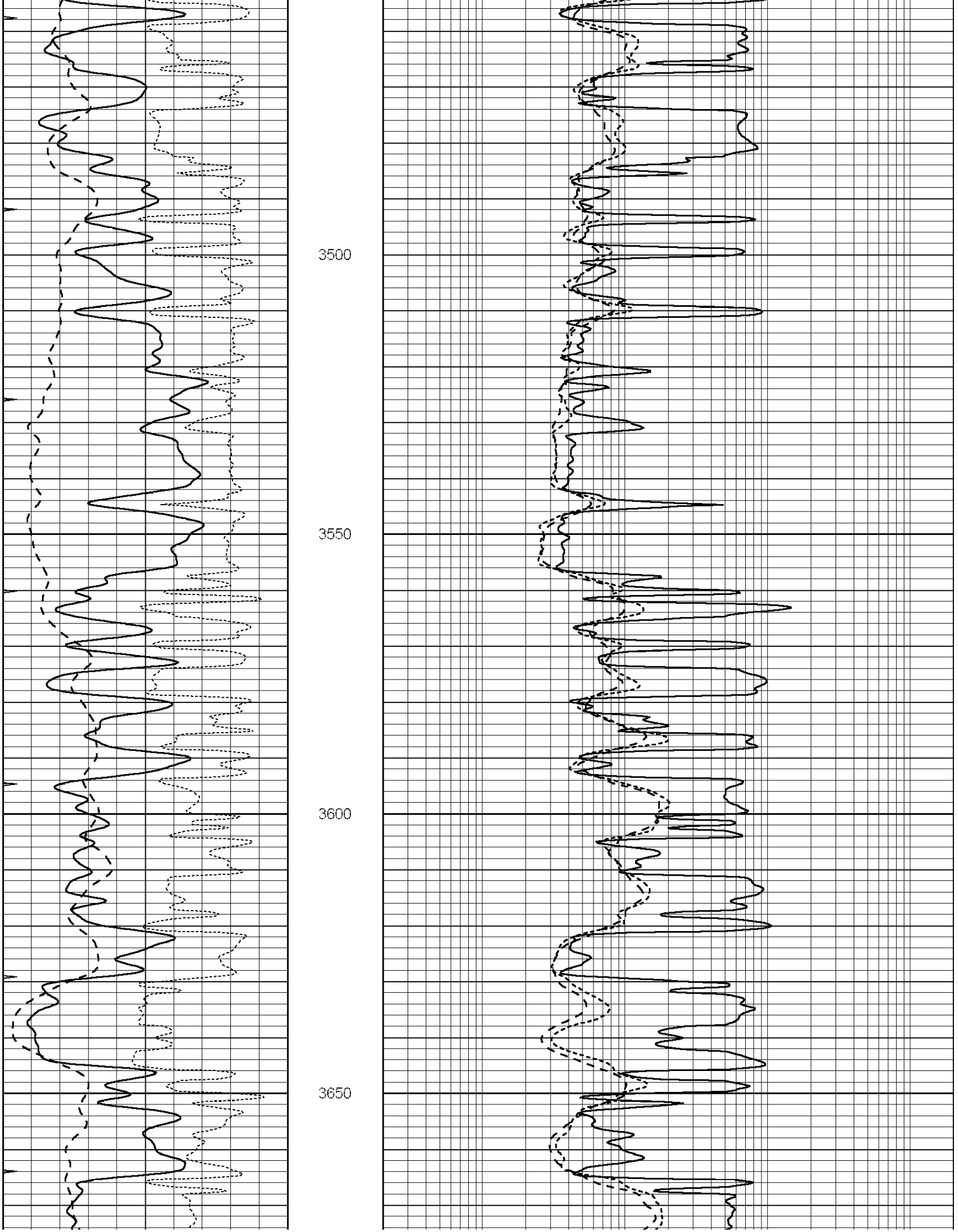
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

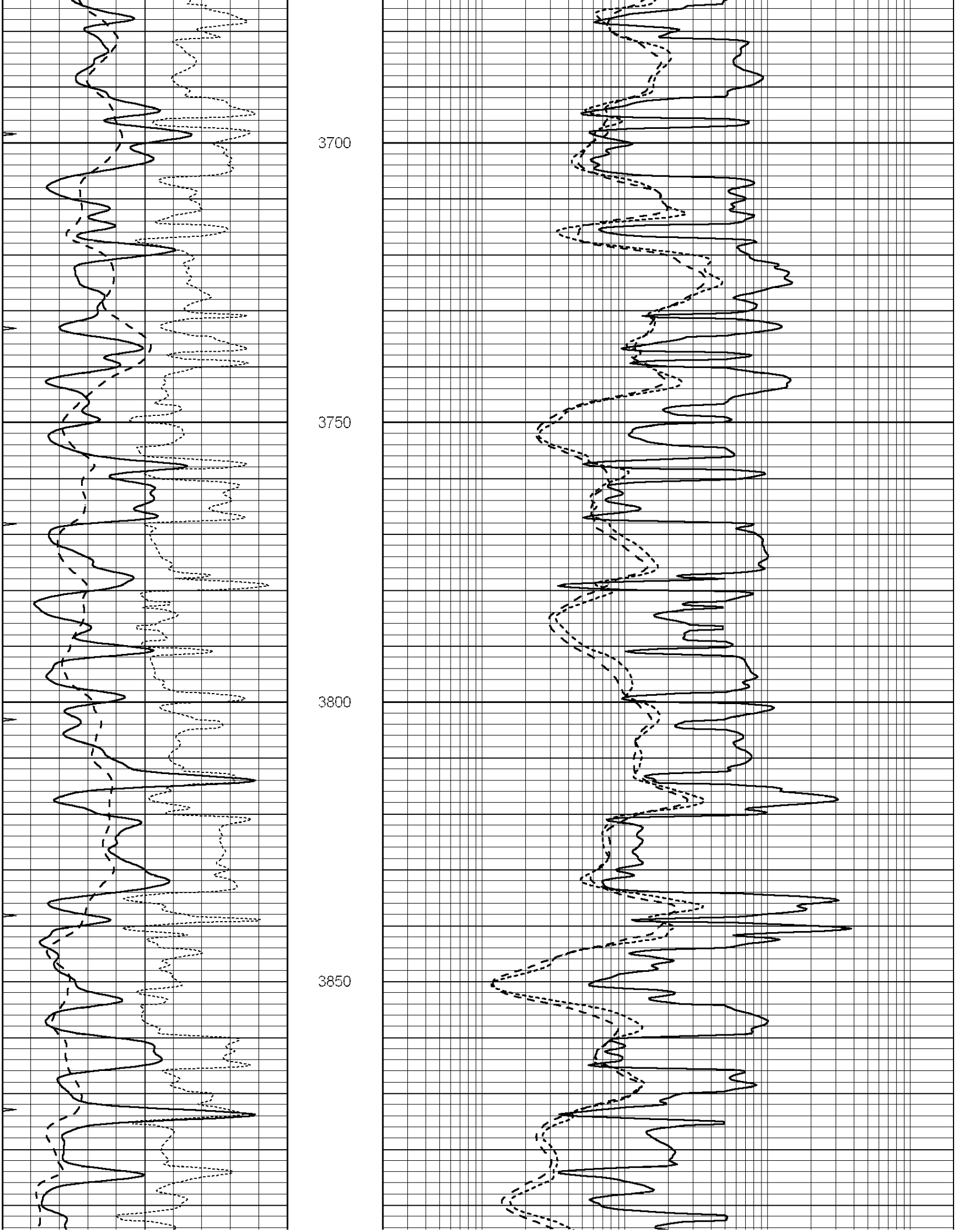
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

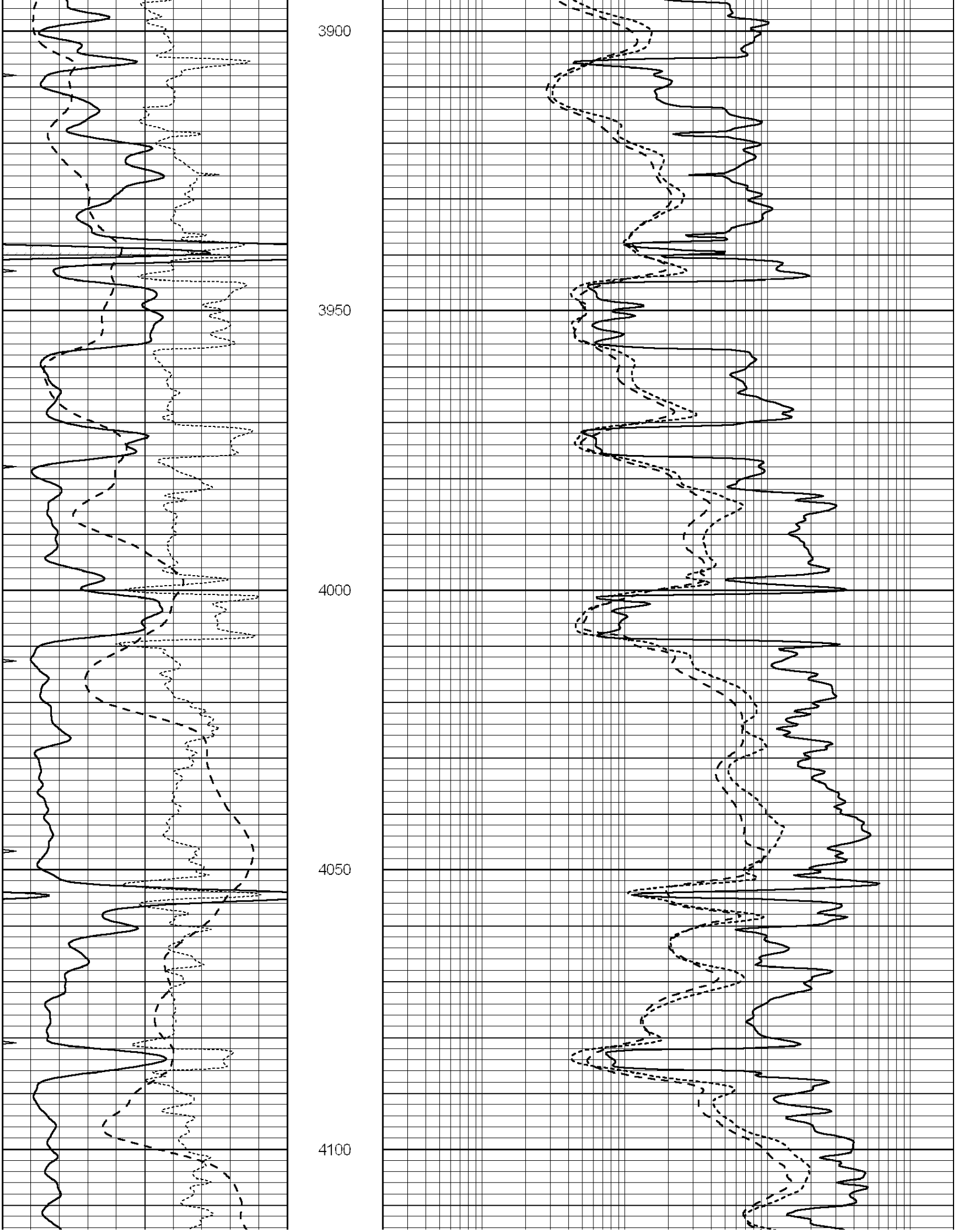
Database File: 011706ddn.db
Dataset Pathname: pass3.3
Presentation Format: _dil
Dataset Creation: Sun Aug 18 16:33:29 2013
Charted by: Depth in Feet scaled 1:240

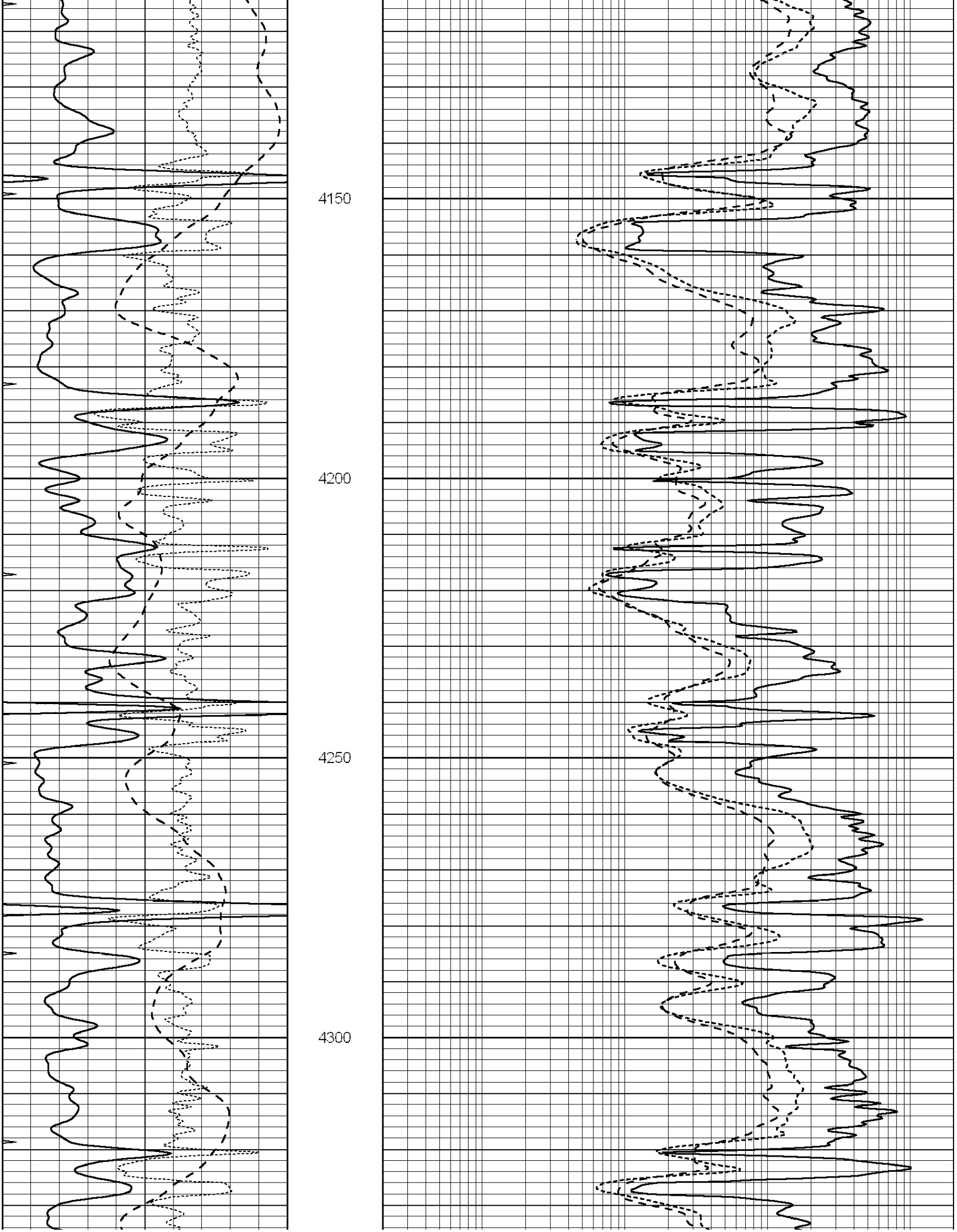
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	RxoRt	50
0	MINMK	20

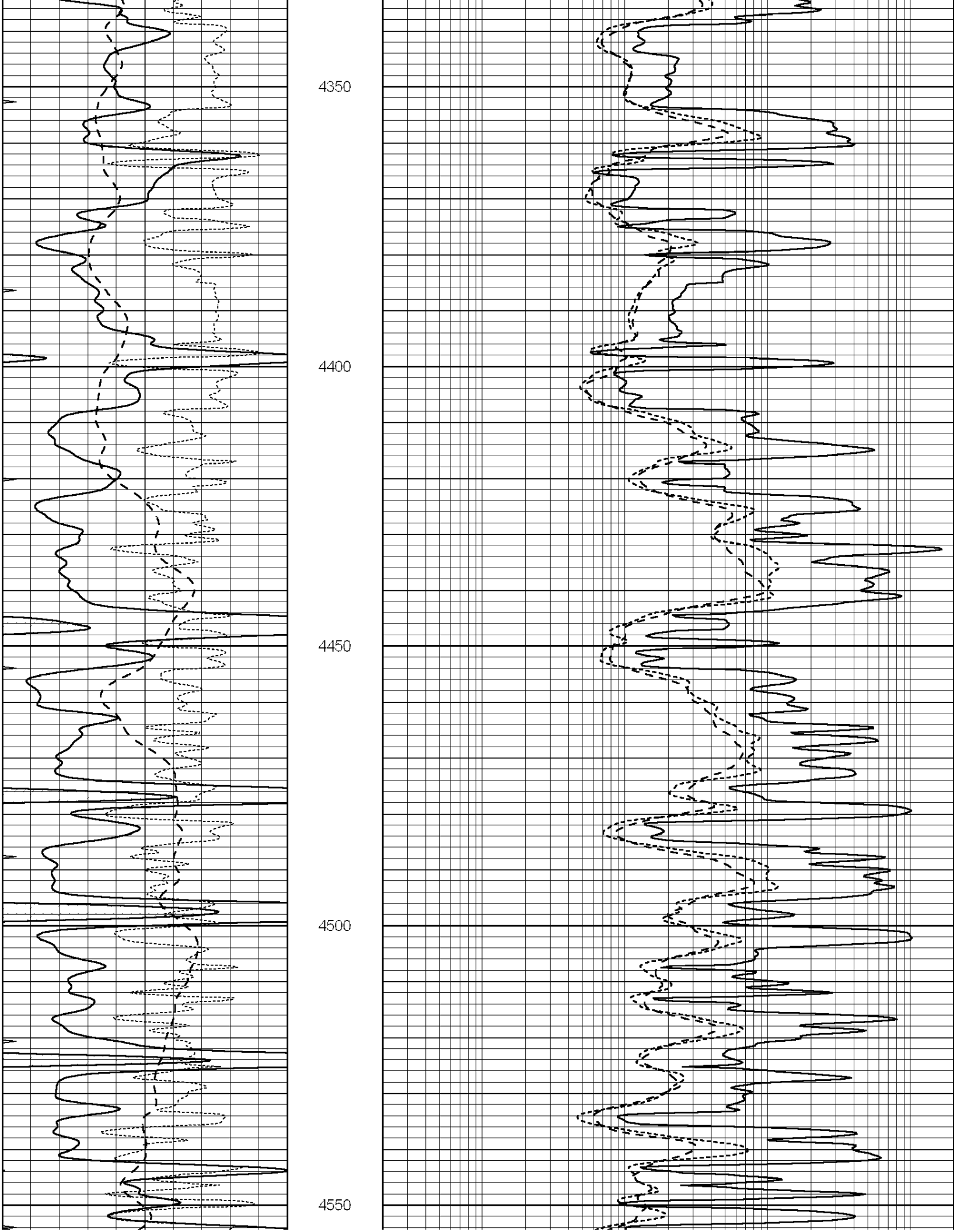
0.2	RLL3 (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

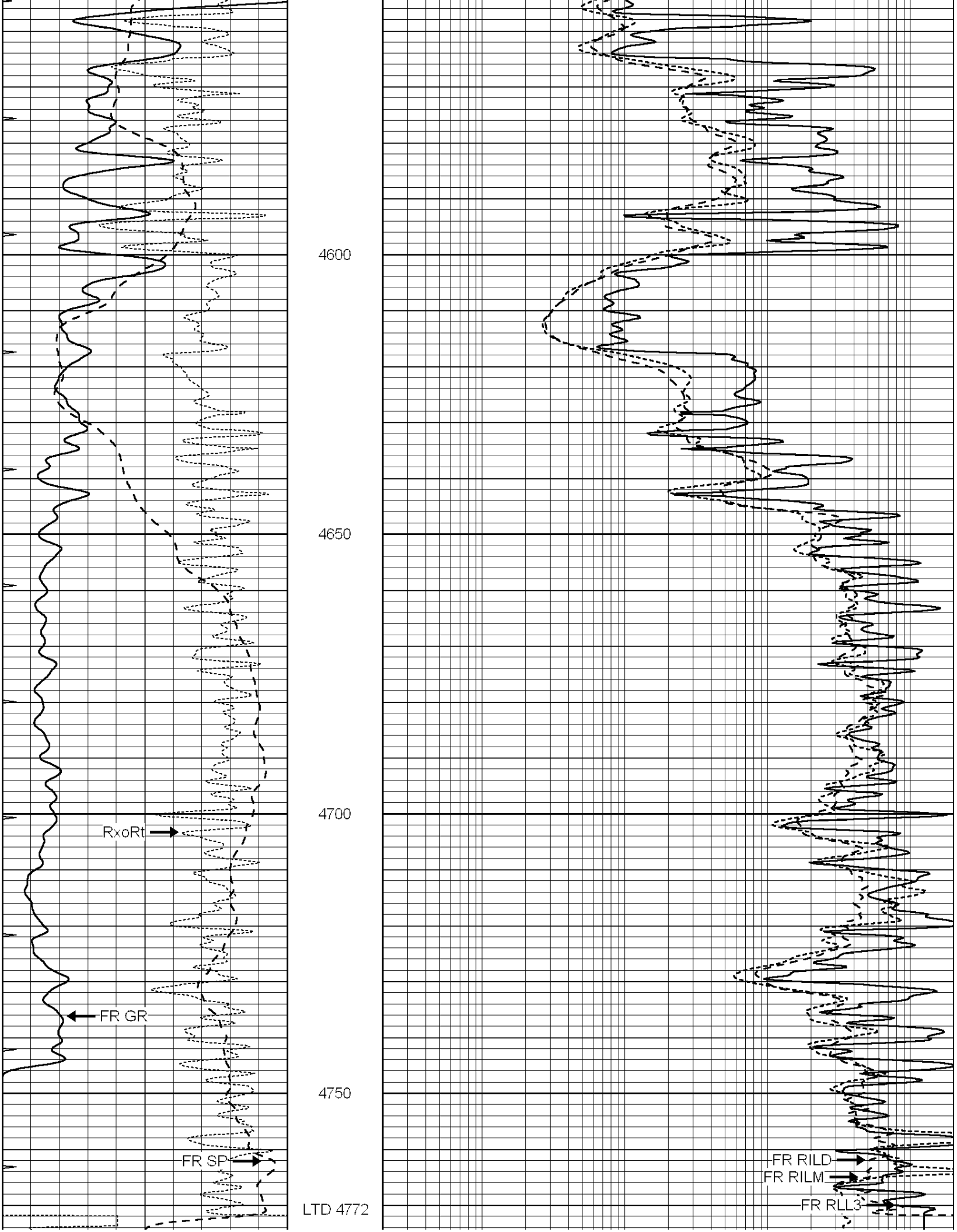

3500
3550
3600
3650

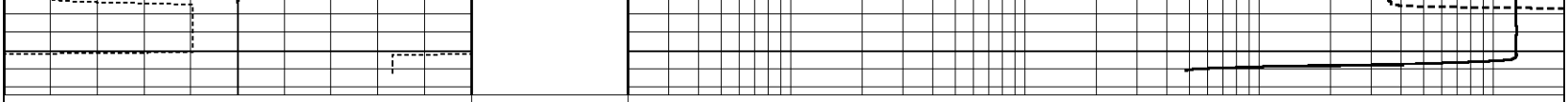

3700
3750
3800
3850


3900
3950
4000
4050
4100


4150
4200
4250
4300


4350
4400
4450
4500
4550


4600
4650
4700
4750
RxoRt
FR GR
FR SP
LTD 4772
FR RILD
FR RILM
FR RLL3



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

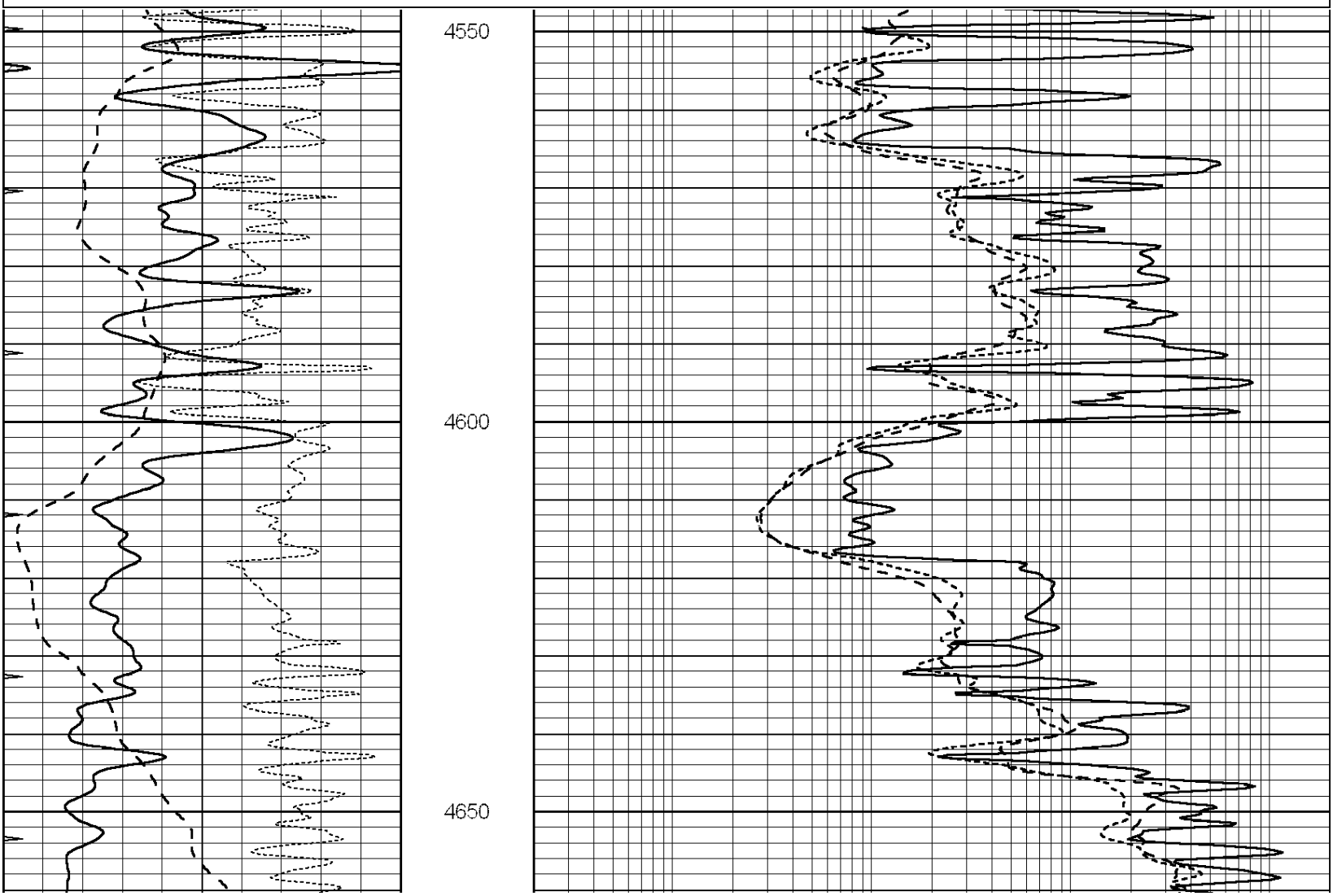
NABORS
COMPLETION & PRODUCTION SERVICES CO.

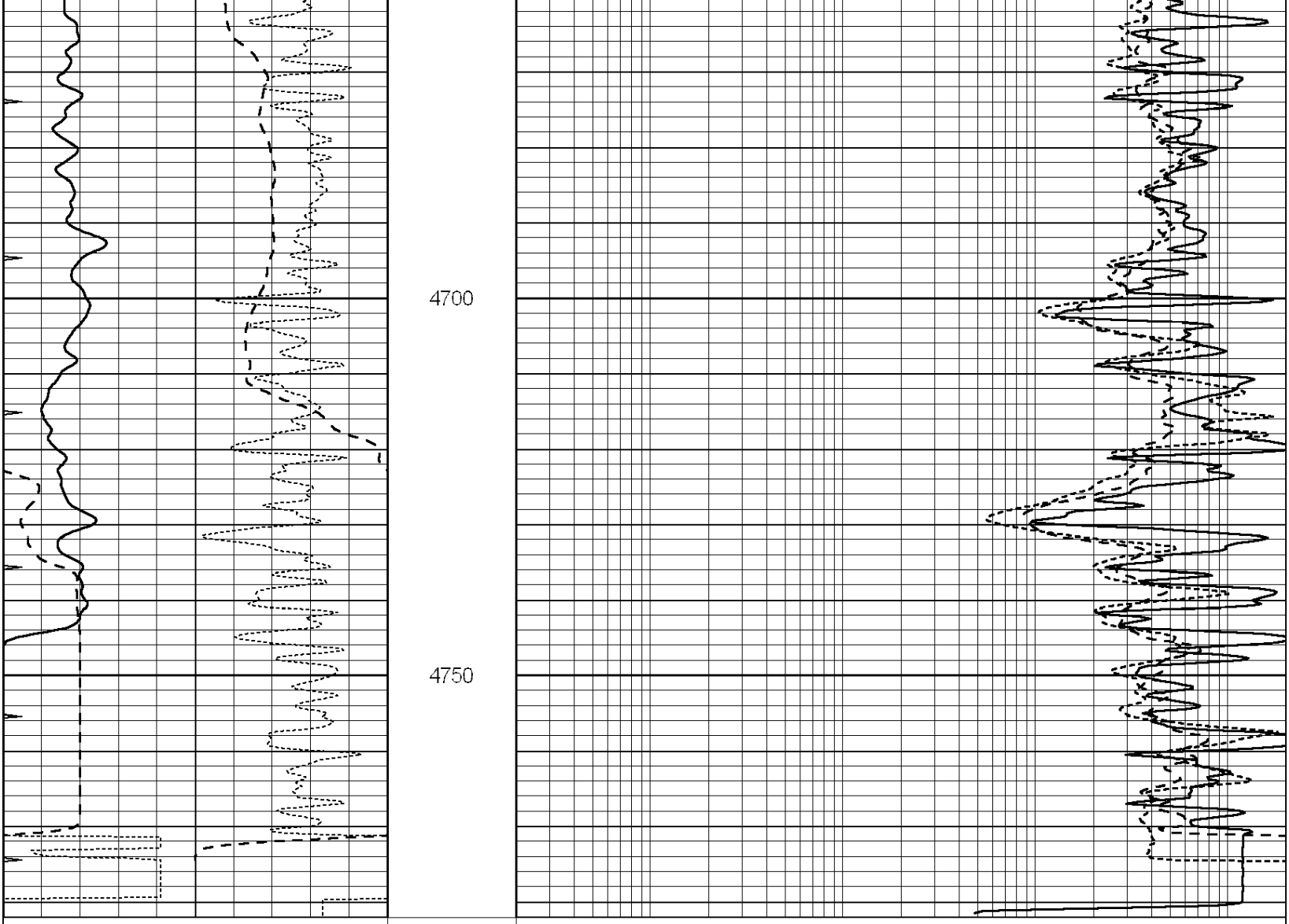
REPEAT SECTION

Database File: 011706ddn.db
Dataset Pathname: pass2.9
Presentation Format: _dil
Dataset Creation: Sun Aug 18 17:28:02 2013 by Calc Open-Cased 090629
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





Calibration Report

Database File: 011706ddn.db
Dataset Pathname: pass3.4
Dataset Creation: Sun Aug 18 17:16:43 2013 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model:	PROBE9-DILG
Surface Cal Performed:	Sat Oct 20 06:29:01 2012
Downhole Cal Performed:	Mon Jul 28 12:02:56 2008
After Survey Verification Performed:	Fri Jun 01 07:32:39 2012

Surface Calibration

	Readings			References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	-0.014	0.629	V	0.000	400.000	mmho/m	530.000	-14.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	540.000	-8.000
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: GEAR2-GEARHART
Source / Verifier: 147 / 147
Master Calibration Performed: Mon Aug 12 03:45:04 2013

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.710	g/cc	923.76	475.45	cps
Aluminum	2.580	g/cc	205.31	331.69	cps

Spine Angle = 76.54 Density/Spine Ratio = 0.563

	Size		Reading	
Small Ring	8.40	in	5.48	V
Large Ring	14.00	in	7.58	V

Compensated Neutron Calibration Report

Serial Number: NEU_4I
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: Fri Aug 16 02:46:42 2013

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.7600 GAPI/cps

Sensitivity:	0.7600	GAPI/cps