

DUAL INDUCTION LOG

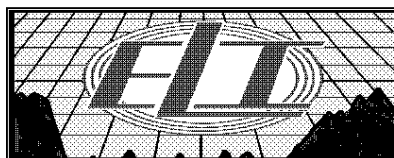
Company	MAI OIL OPERATIONS, INC.		
Well	CHRISTIANSEN #2		
Field	MUELLER		
County	STAFFORD	State	KANSAS
Location:	APL # : 15-185-24039-0000 1320' FNL & 1773' FVL E/2 - W/2 - E/2 - NW		Other Services CDL/CNL MEL
Permanent Datum	GROUND LEVEL	Elevation	1864
Log Measured From	KELLY BUSHING 8' A.G.L.		
Drilling Measured From	KELLY BUSHING		
SEC 18	TWP 21S	RGE 12W	
Date	11/14/18		
Run Number	ONE		
Depth Driller	3700		
Depth Logger	3700		
Bottom Logged Interval	3698		
Top Log Interval	00		
Casing Driller	8 5/8"@700'		
Casing Logger	700		
Bit Size	7 7/8"		
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,000 PPM	
Density / Viscosity	9.4/57		
pH / Fluid Loss	8.0/14.0		
Source of Sample	FLOWLINE		
Rin @ Meas. Temp	.400@60F		
Rinf @ Meas. Temp	.300@60F		
Rinc @ Meas. Temp	.480@60F		
Source of Rinf / Rinc	MEASUREMENT		
Rin @ BHT	.212@113F		
Time Circulation Stopped	2 HOURS		
Time Logger on Bottom	3:15 A.M.		
Maximum Recorded Temperature	113F		
Equipment Number	922339		
Location	HAYS, KANSAS		
Recorded By	JEFF LUEBBERS		
Witnessed By	JIM MUSGROVE		

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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

THANK YOU FOR USING ELI WIRELINE HAYS, KANSAS (785) 628-6395
DIRECTIONS
GREAT BEND, KS. E. TO DARTMOUTH BLKTOP, 10 S., 1W., 1/4S., E. INTO



MAIN SECTION

Database File: 3059ddn.db
Dataset Pathname: pass3.5
Presentation Format: dil2
Dataset Creation: Wed Nov 14 04:23:24 2018
Charted by: Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100
0	RWA (Ohm-m)	1

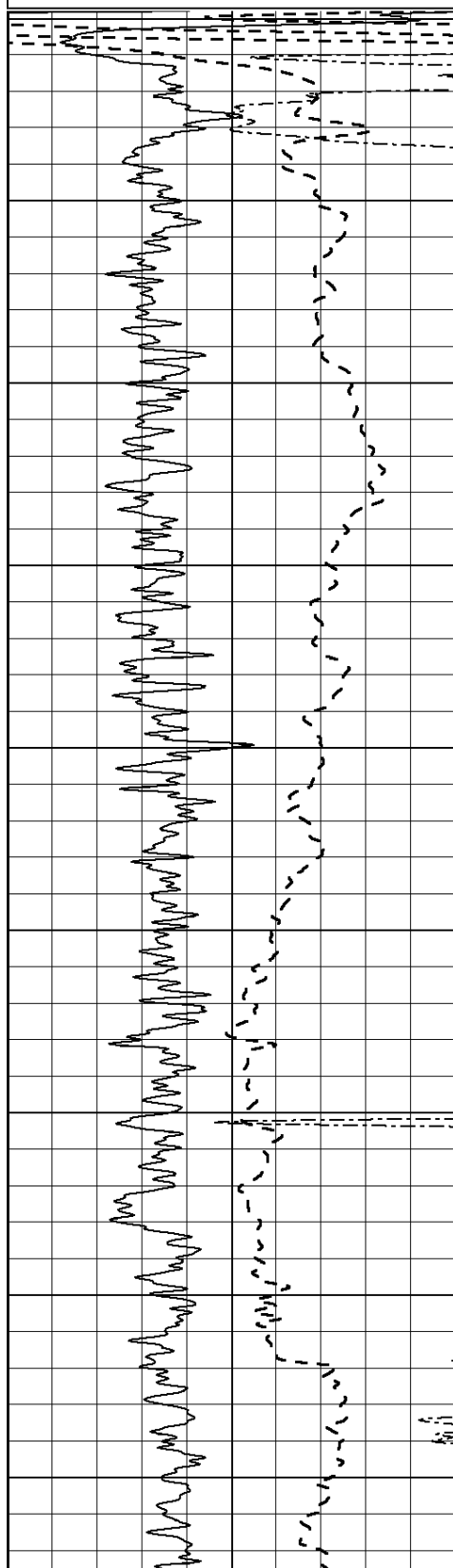
0	RLL3 (Ohm-m)	50
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0	RILD (Ohm-m)	50
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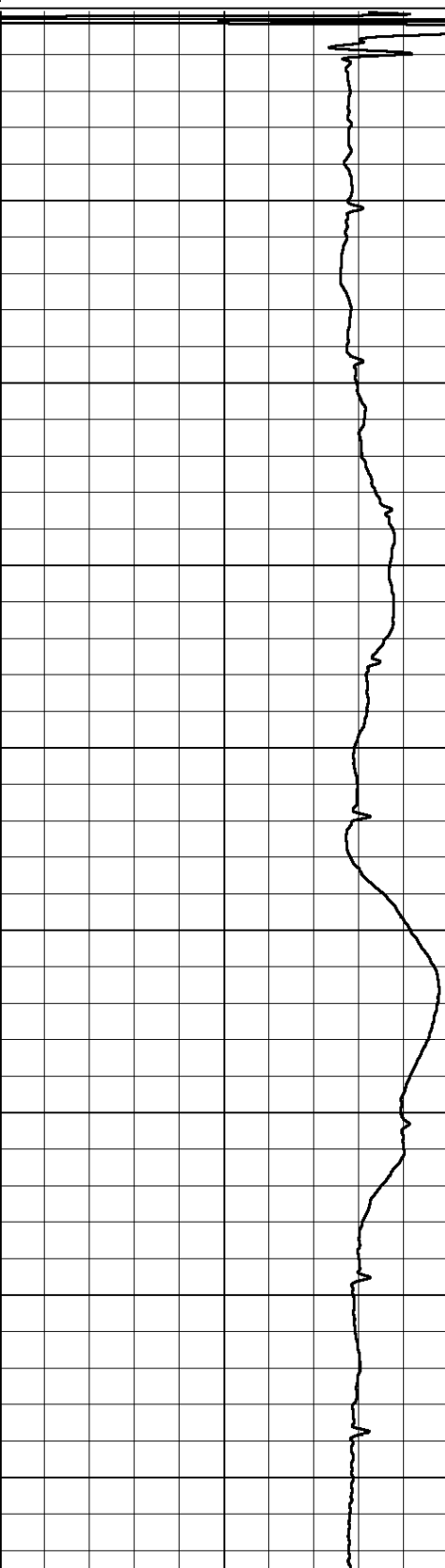
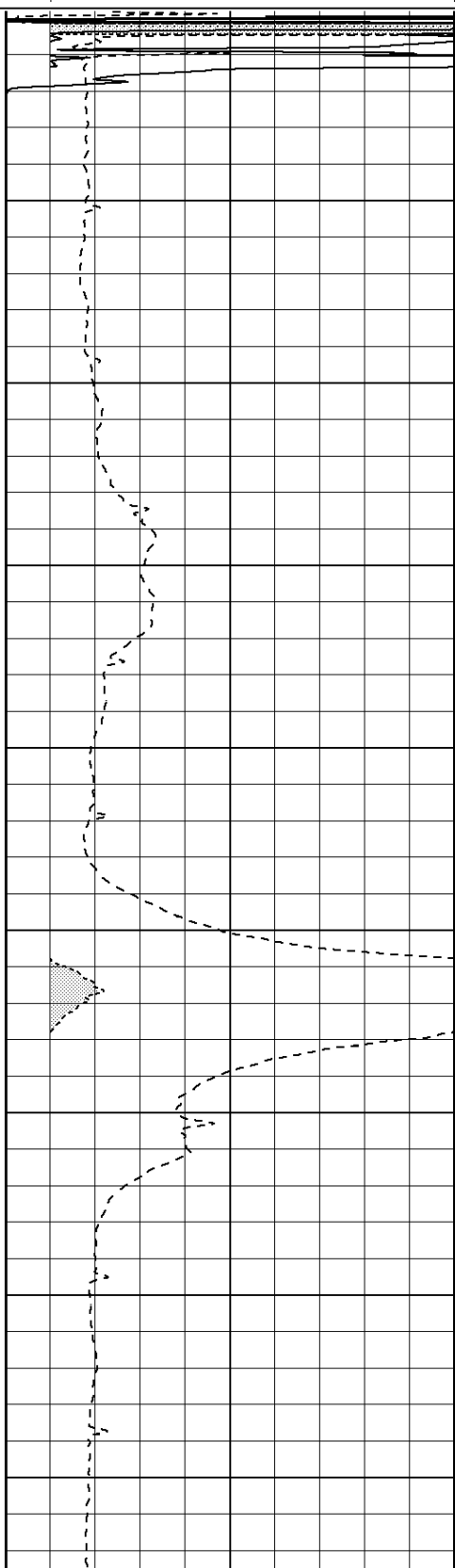
1000	CILD (mmho/m)	0
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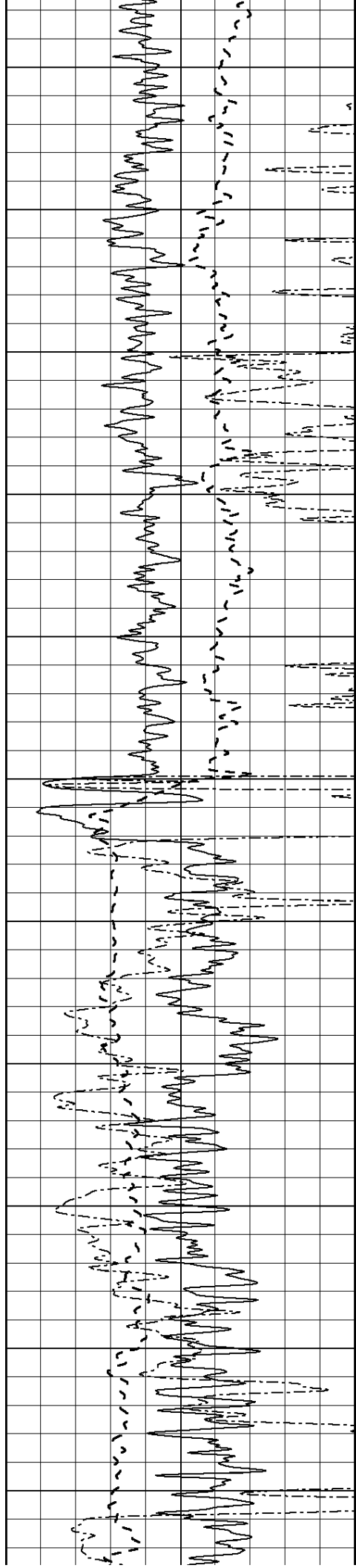
50	RILD X10 (Ohm-m)	500
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50	RLL3 X10 (Ohm-m)	500
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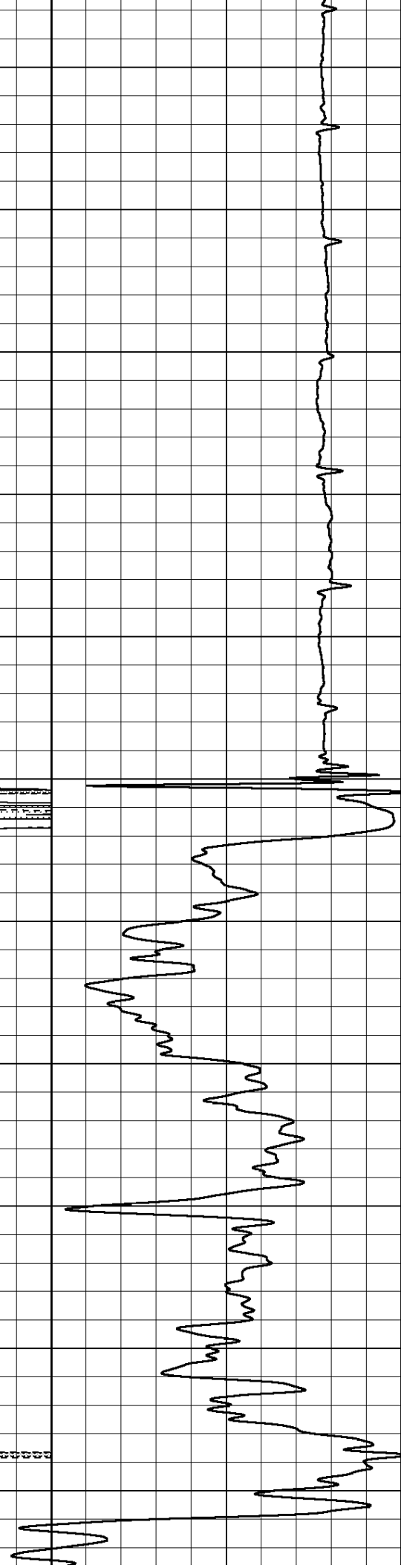
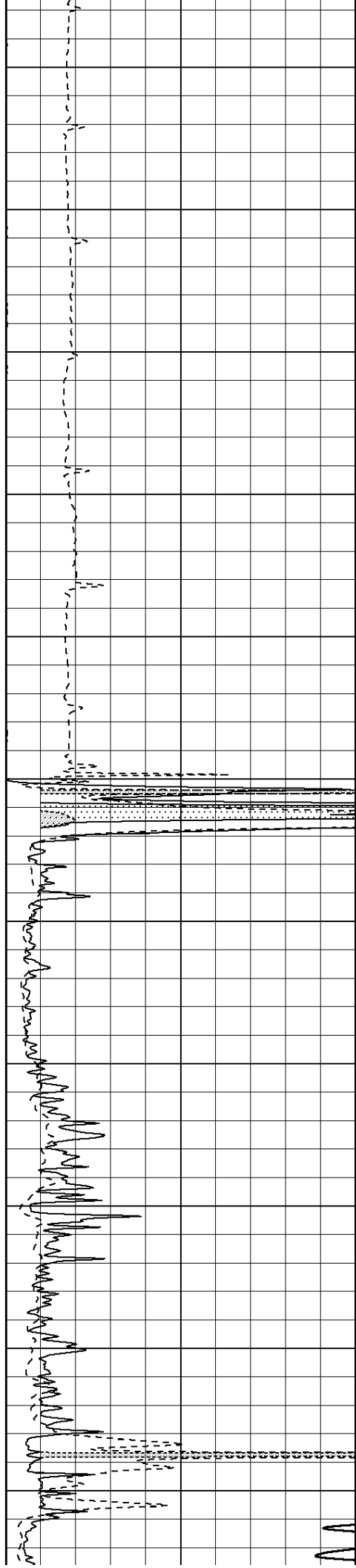


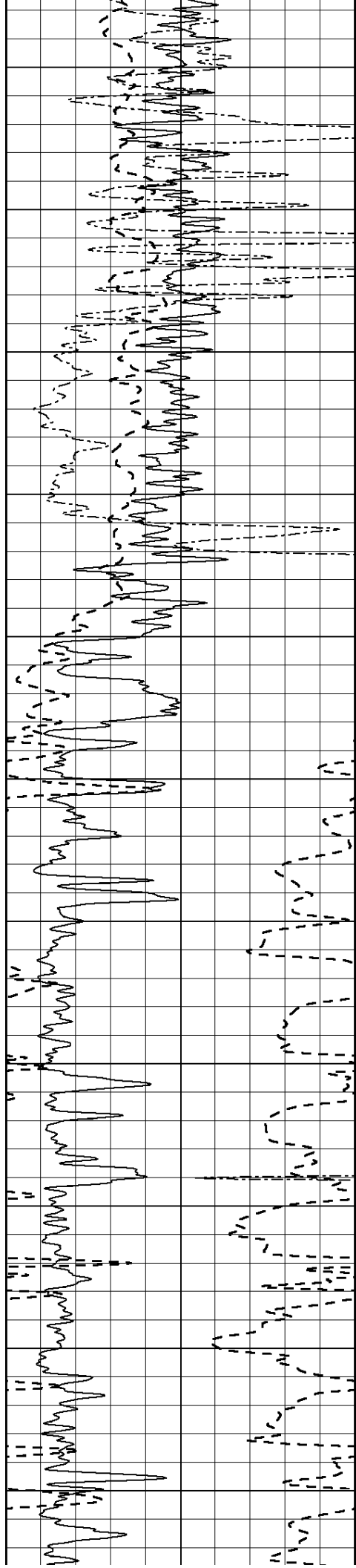
0
50
100
150
200
250
300
350
400



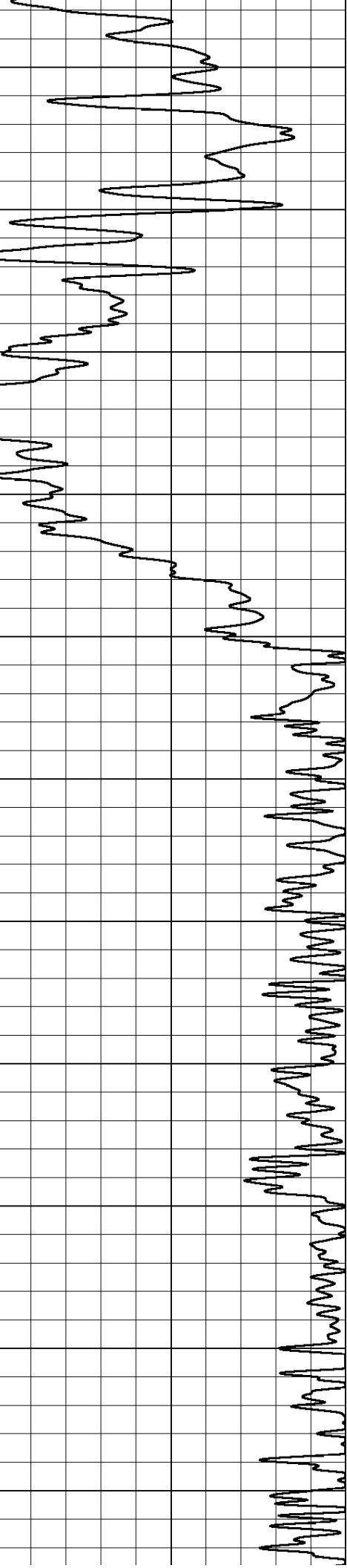
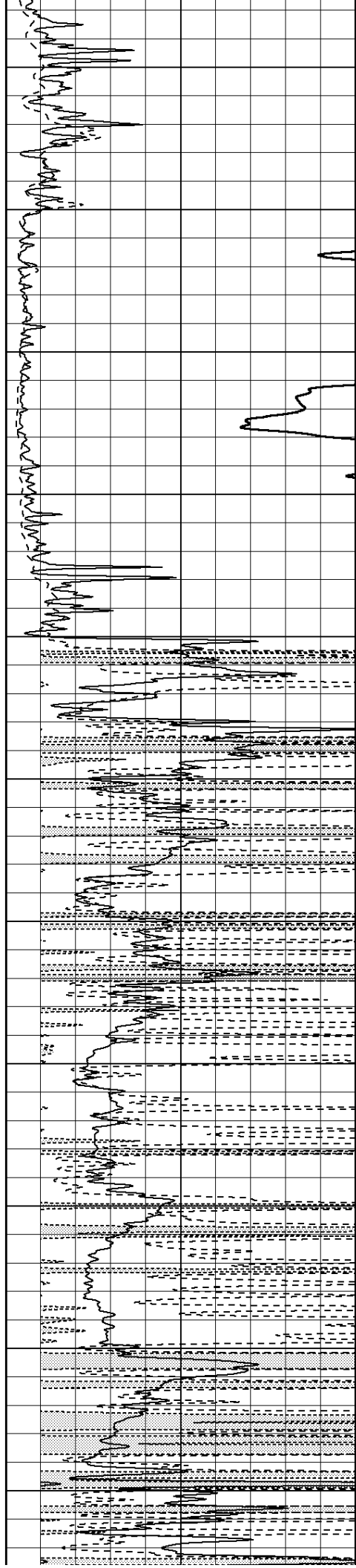


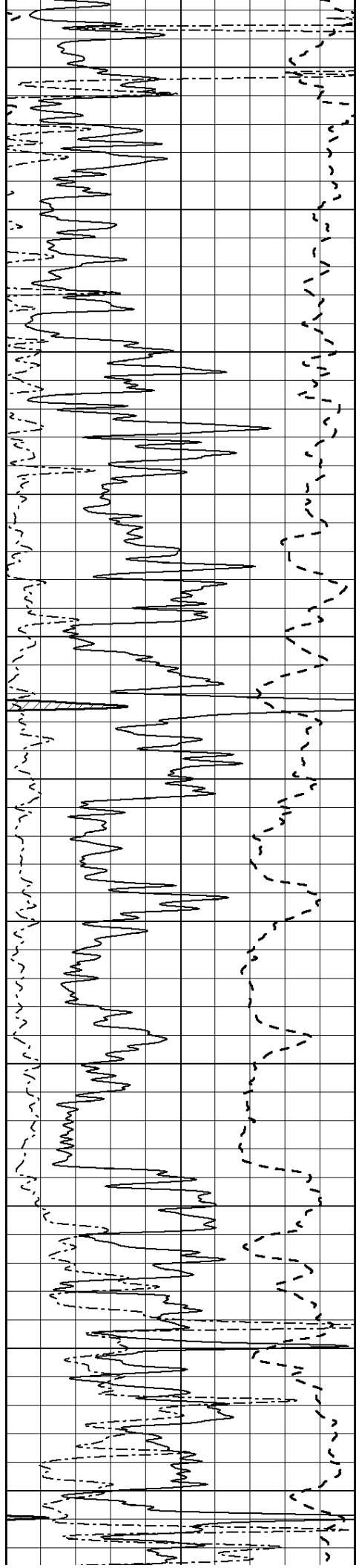
450
500
550
600
650
700
750
800
850
900
950





1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500





1550

1600

1650

1700

1750

1800

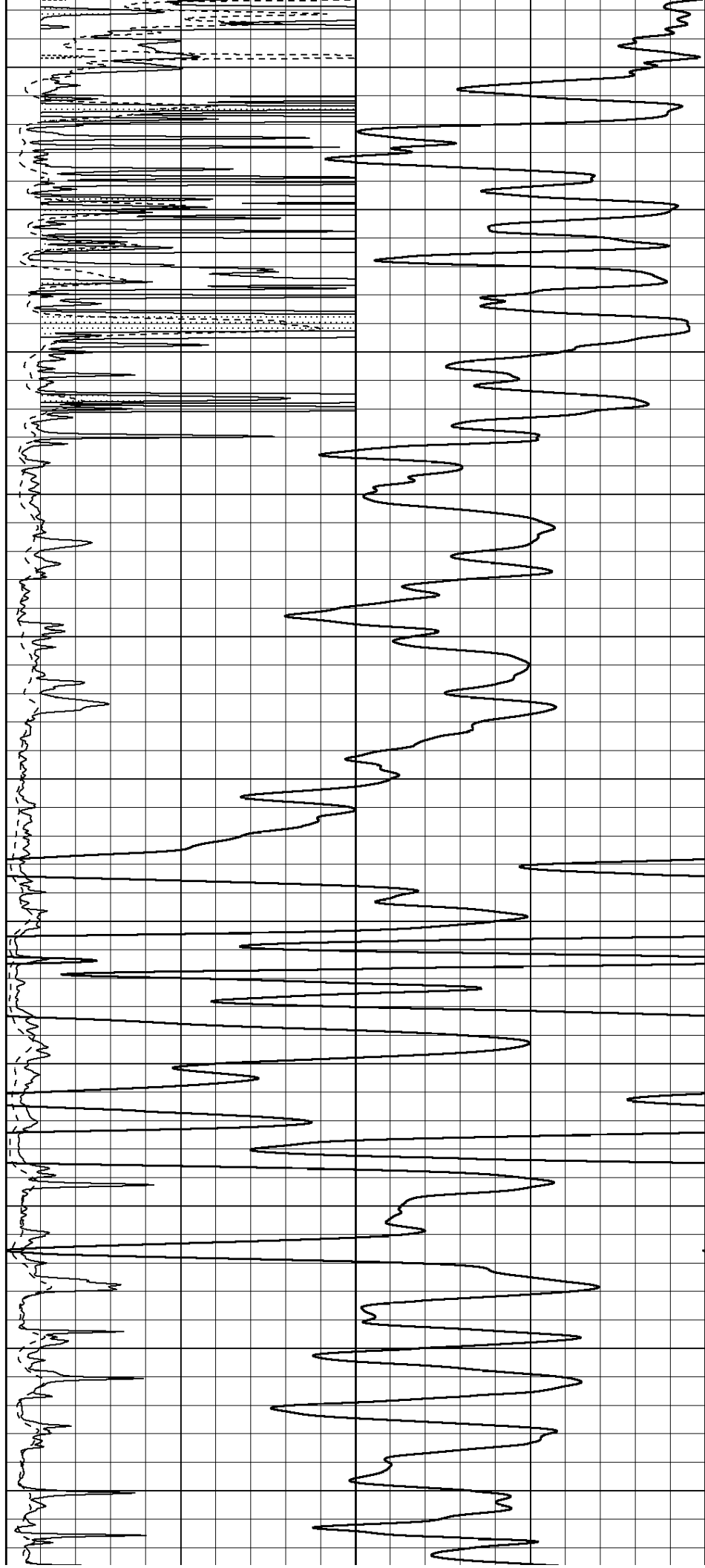
1850

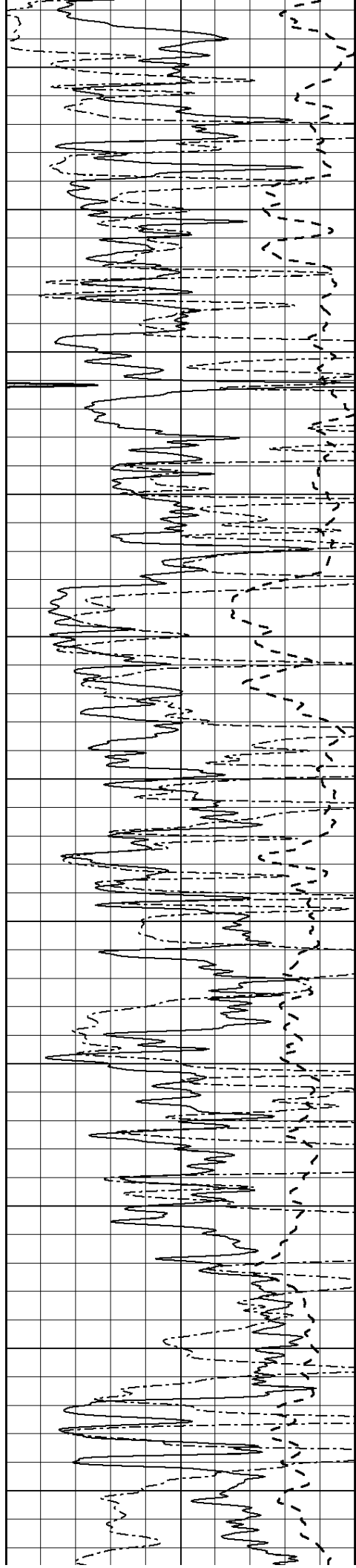
1900

1950

2000

2050





2100

2150

2200

2250

2300

2350

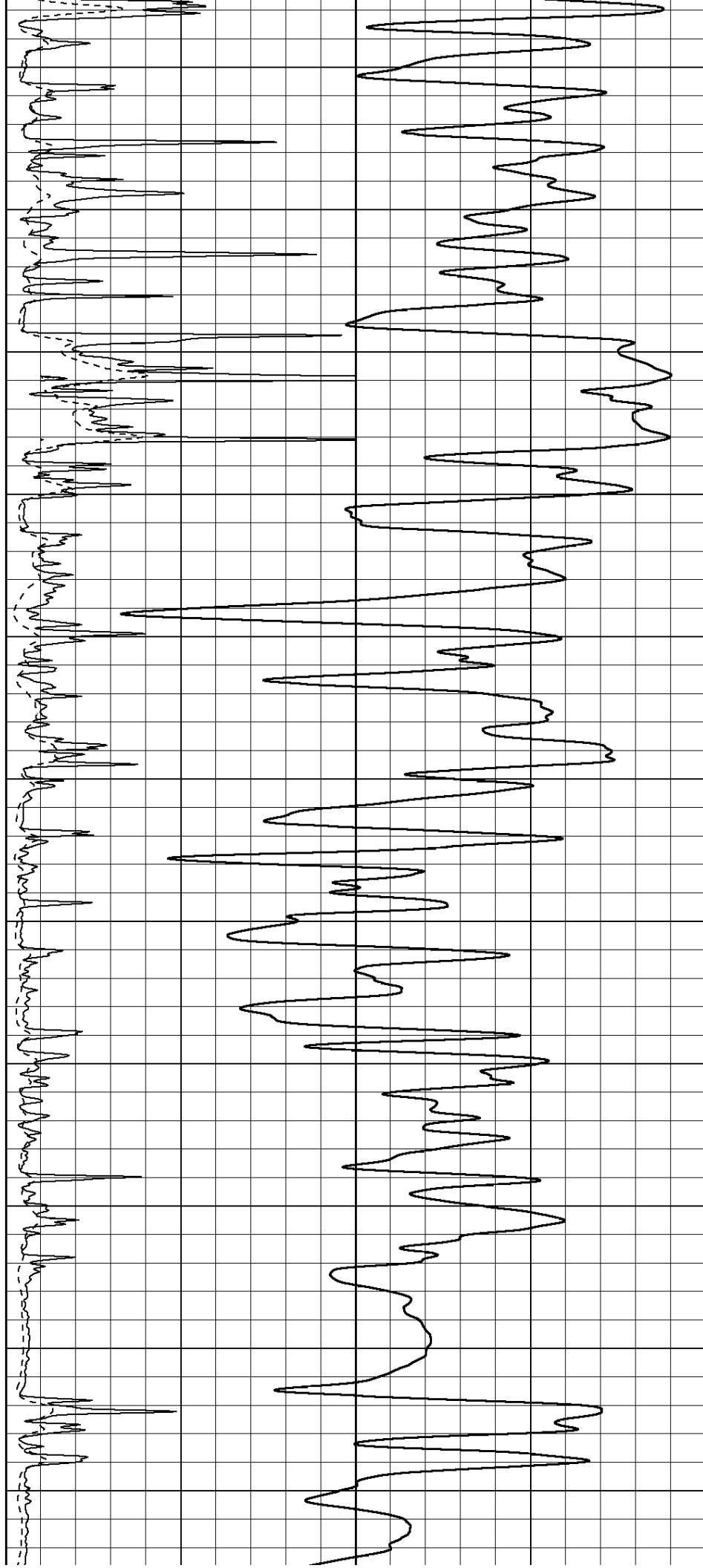
2400

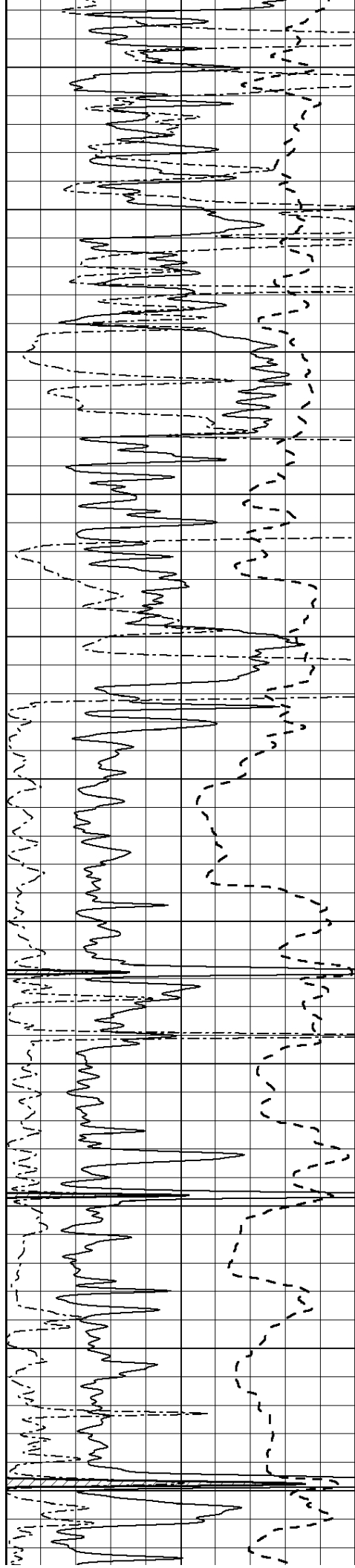
2450

2500

2550

2600





2650

2700

2750

2800

2850

2900

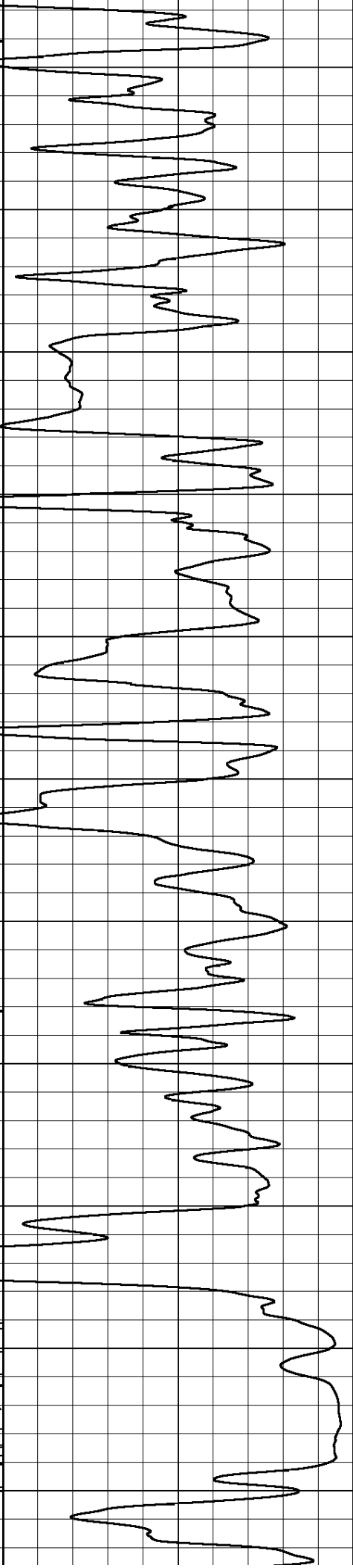
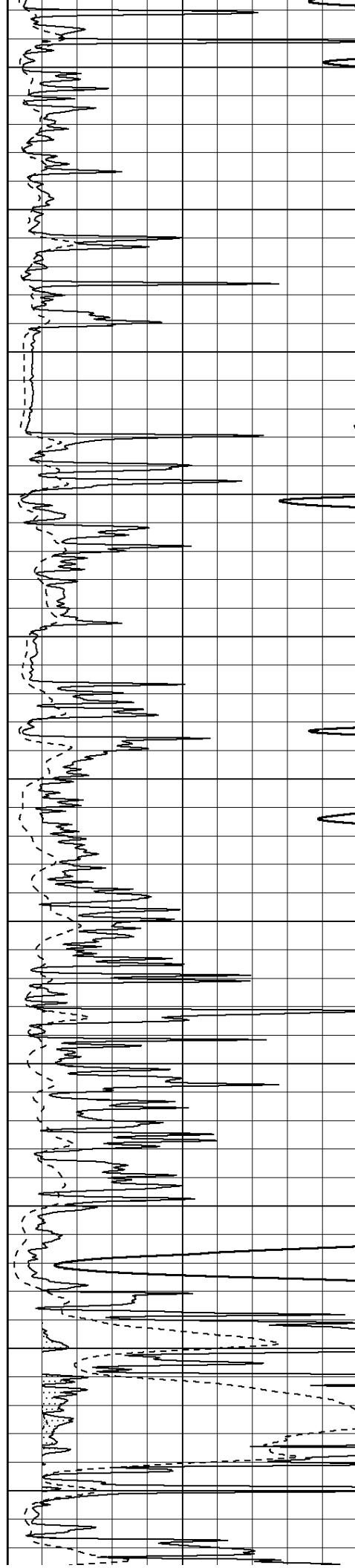
2950

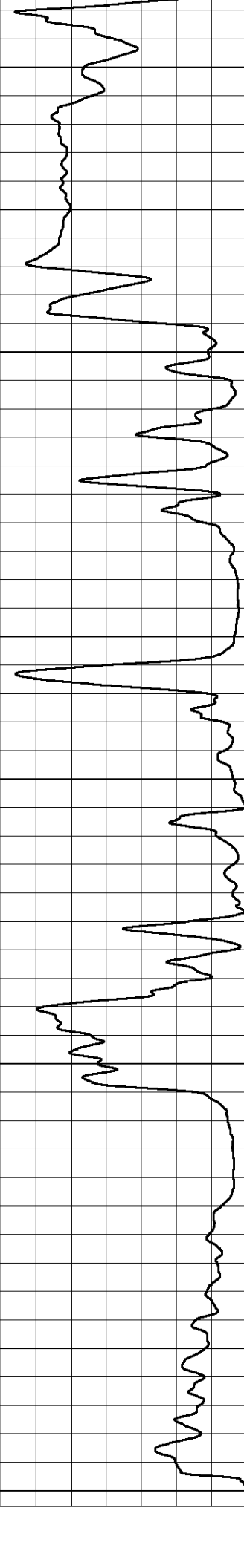
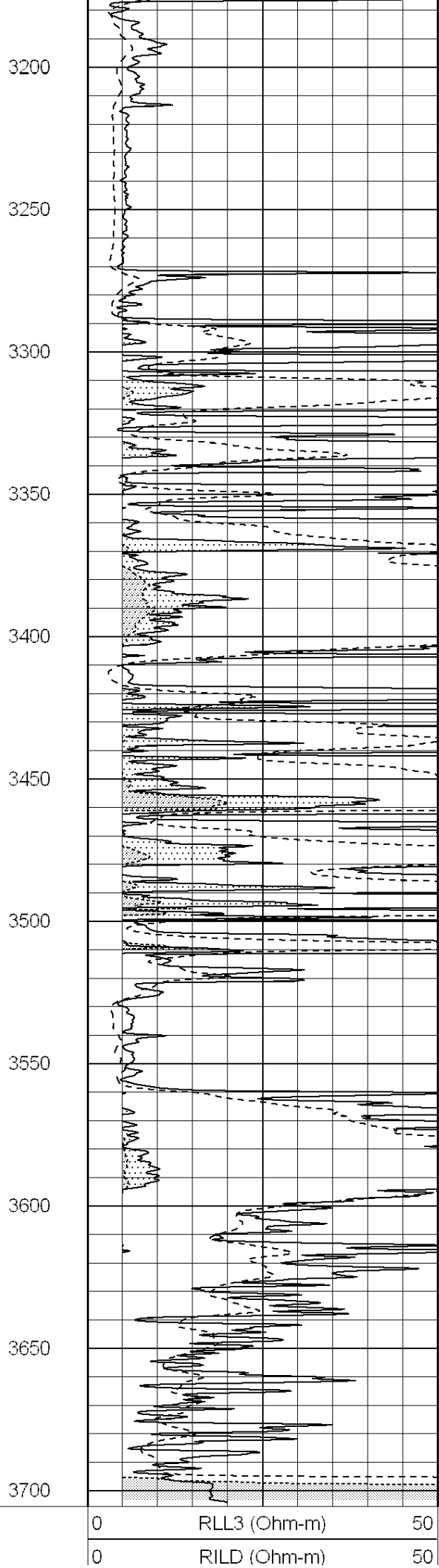
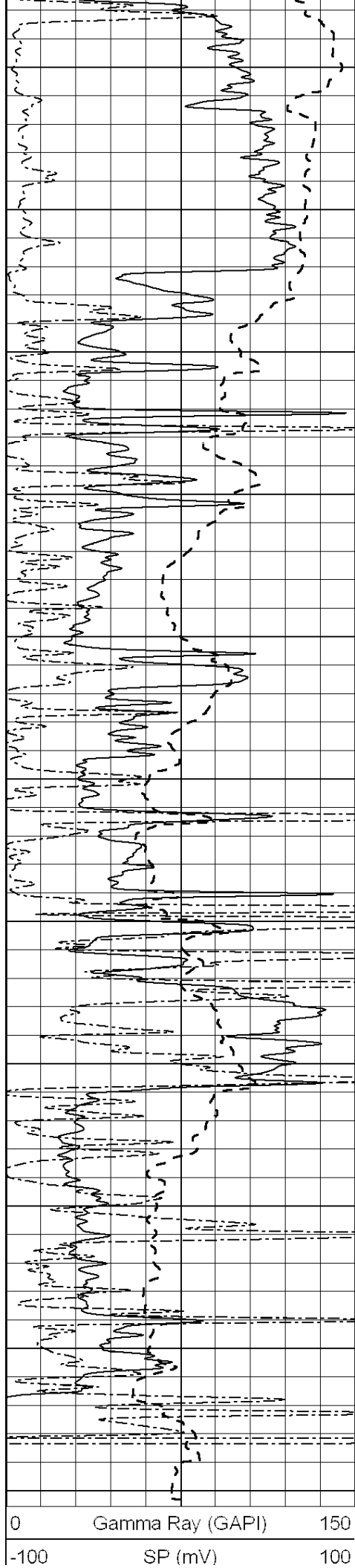
3000

3050

3100

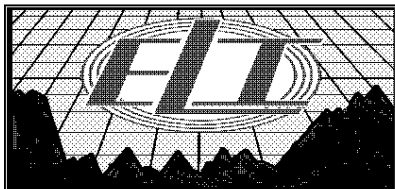
3150





0	RWA (Ohm-m)	1
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1000	CILD (mmho/m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

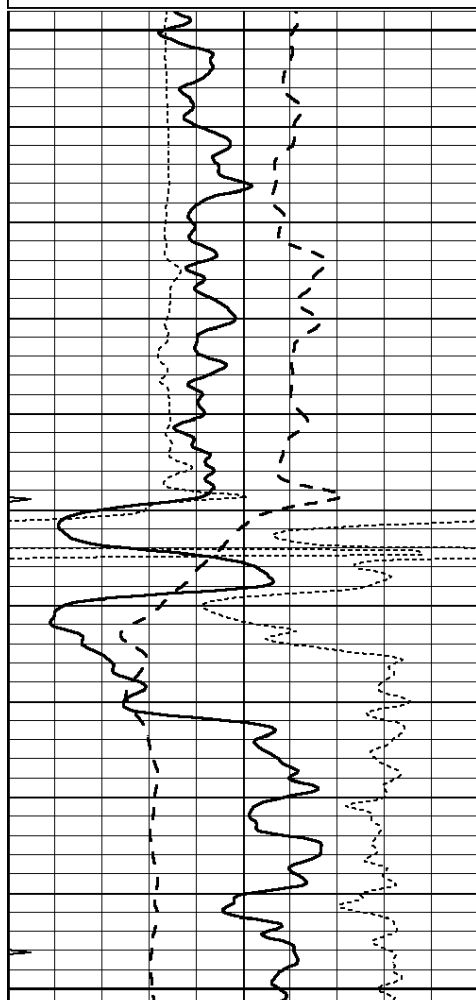


ANHYDRITE

Database File: 3059ddn.db
 Dataset Pathname: pass3.6
 Presentation Format: _dil
 Dataset Creation: Wed Nov 14 04:24:45 2018
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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

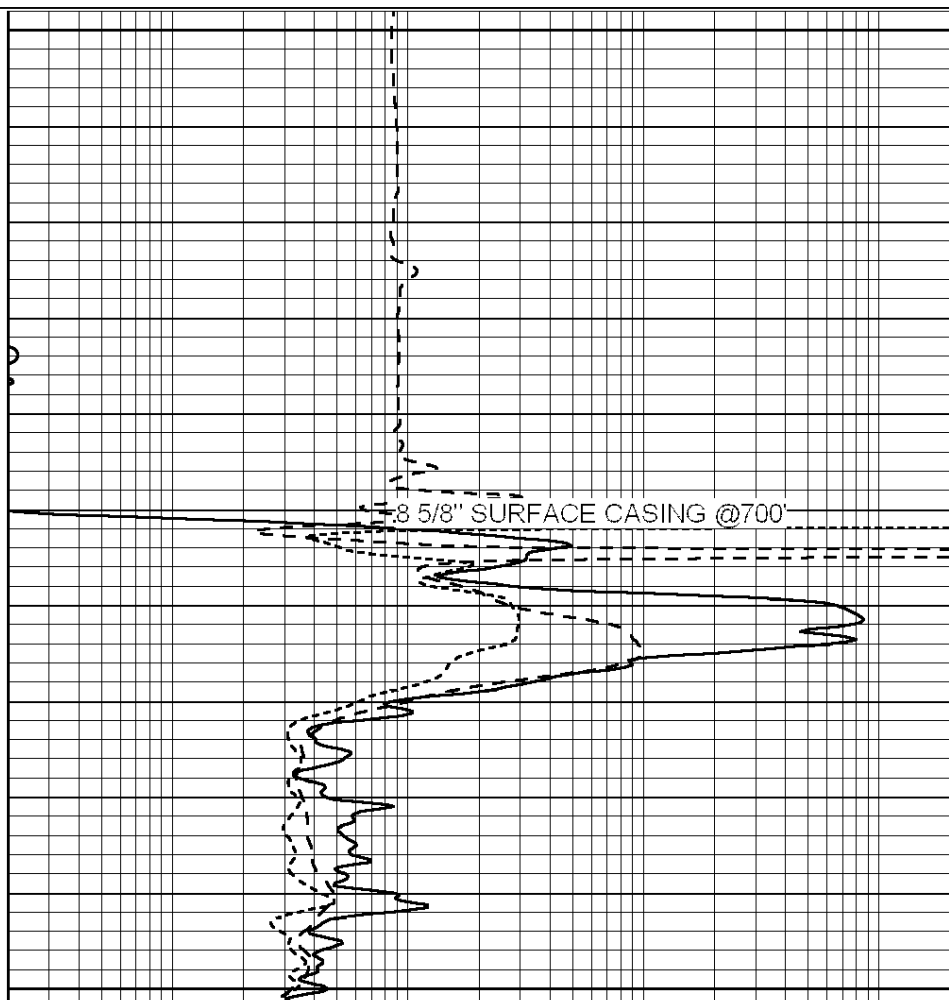


650

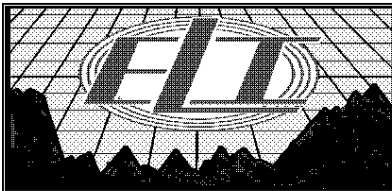
700

750

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



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

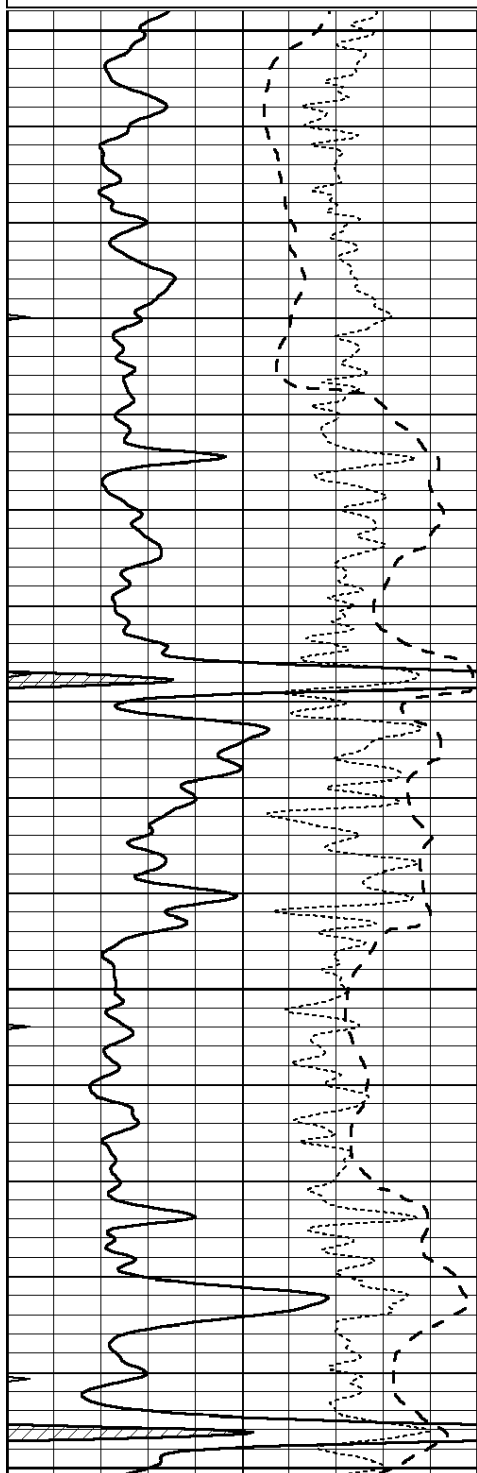


MAIN SECTION

Database File: 3059ddn.db
Dataset Pathname: pass3.5
Presentation Format: _dil
Dataset Creation: Wed Nov 14 04:23:24 2018
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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

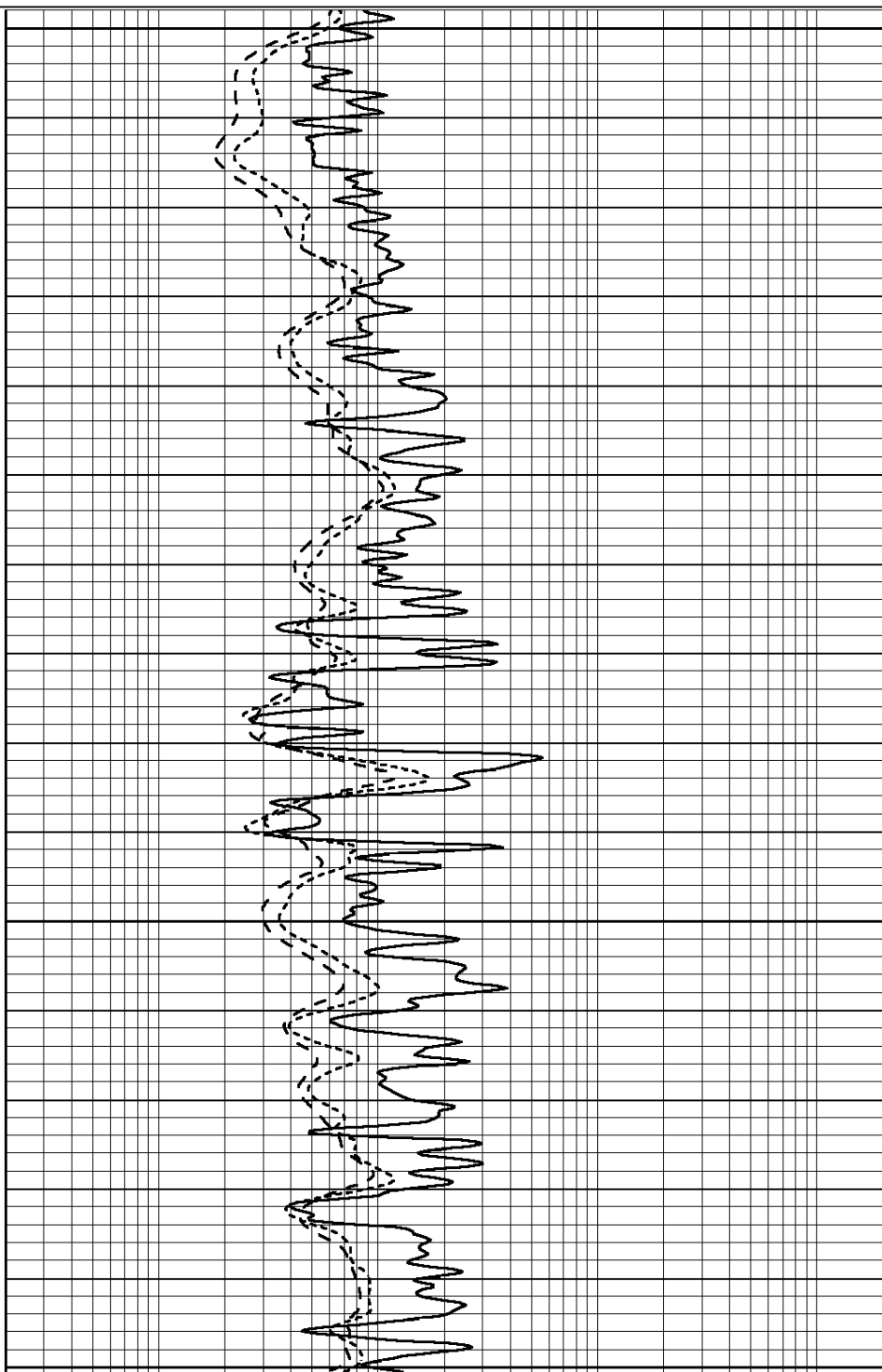


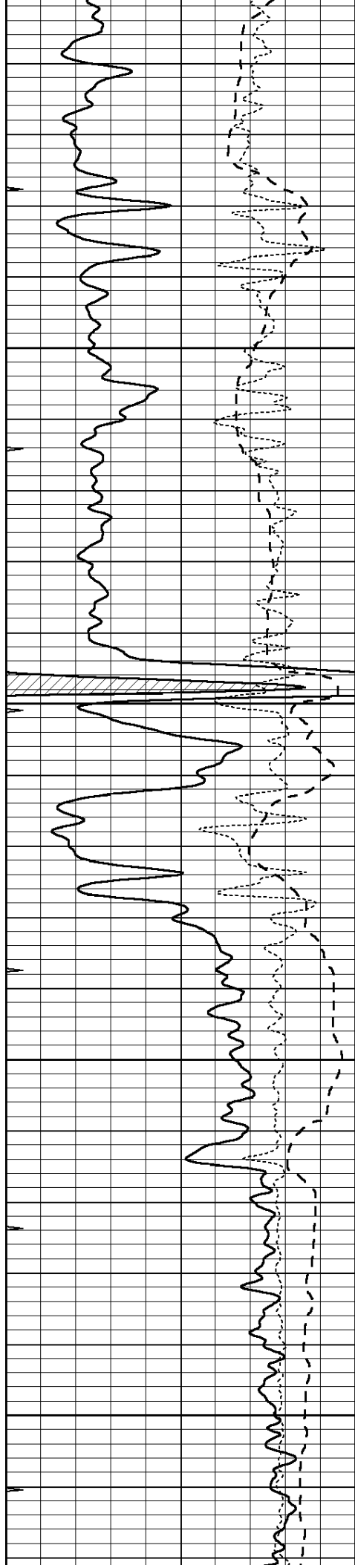
2900

2950

3000

3050



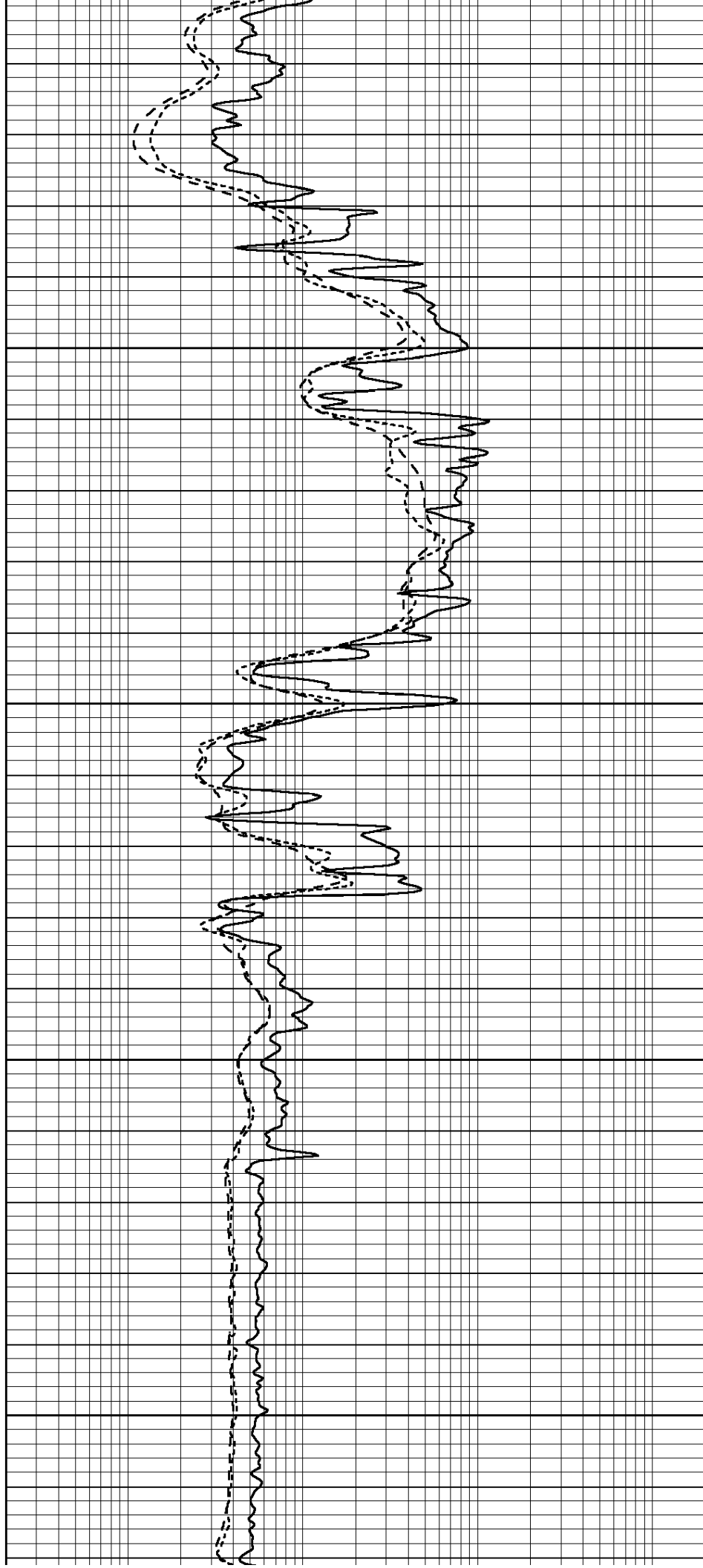


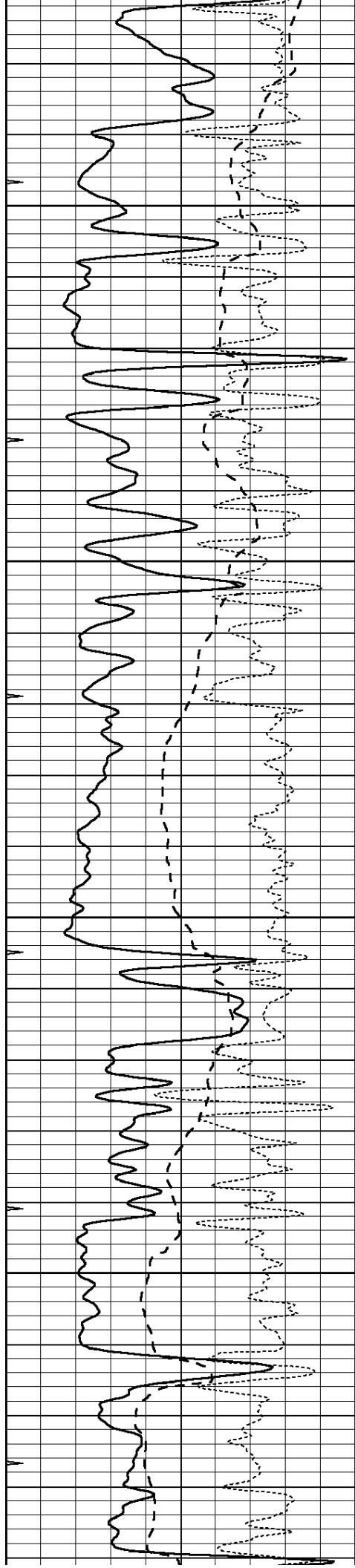
3100

3150

3200

3250



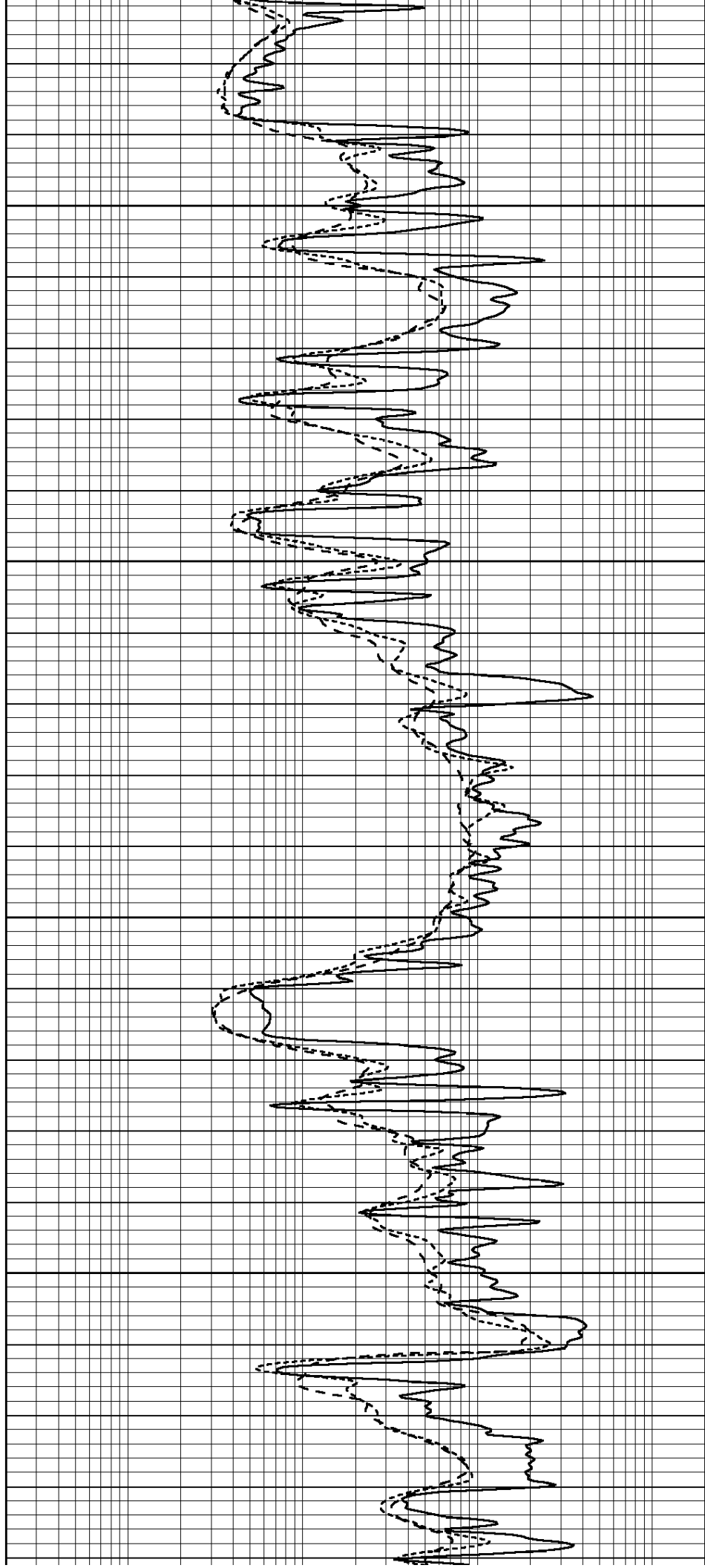


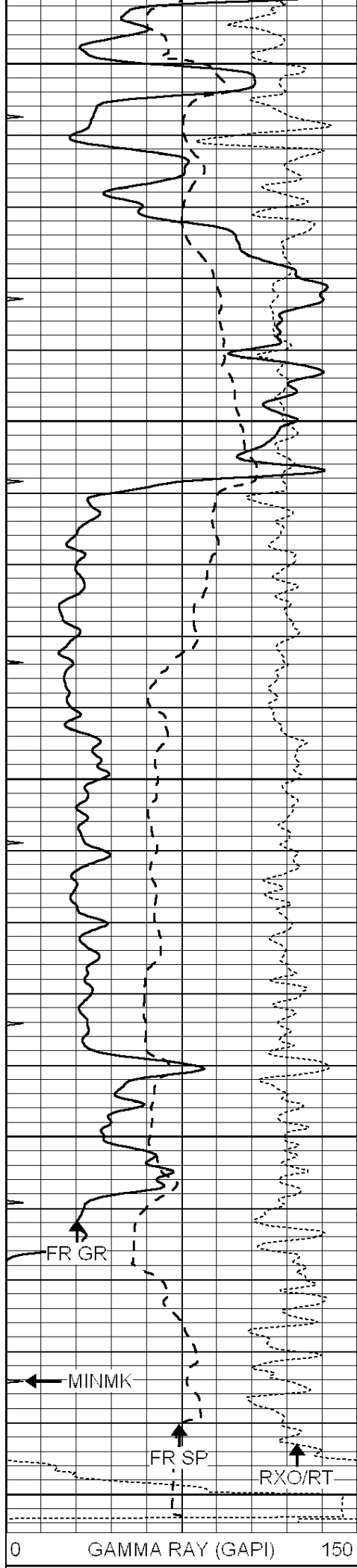
3300

3350

3400

3450





3500

3550

3600

3650

3700

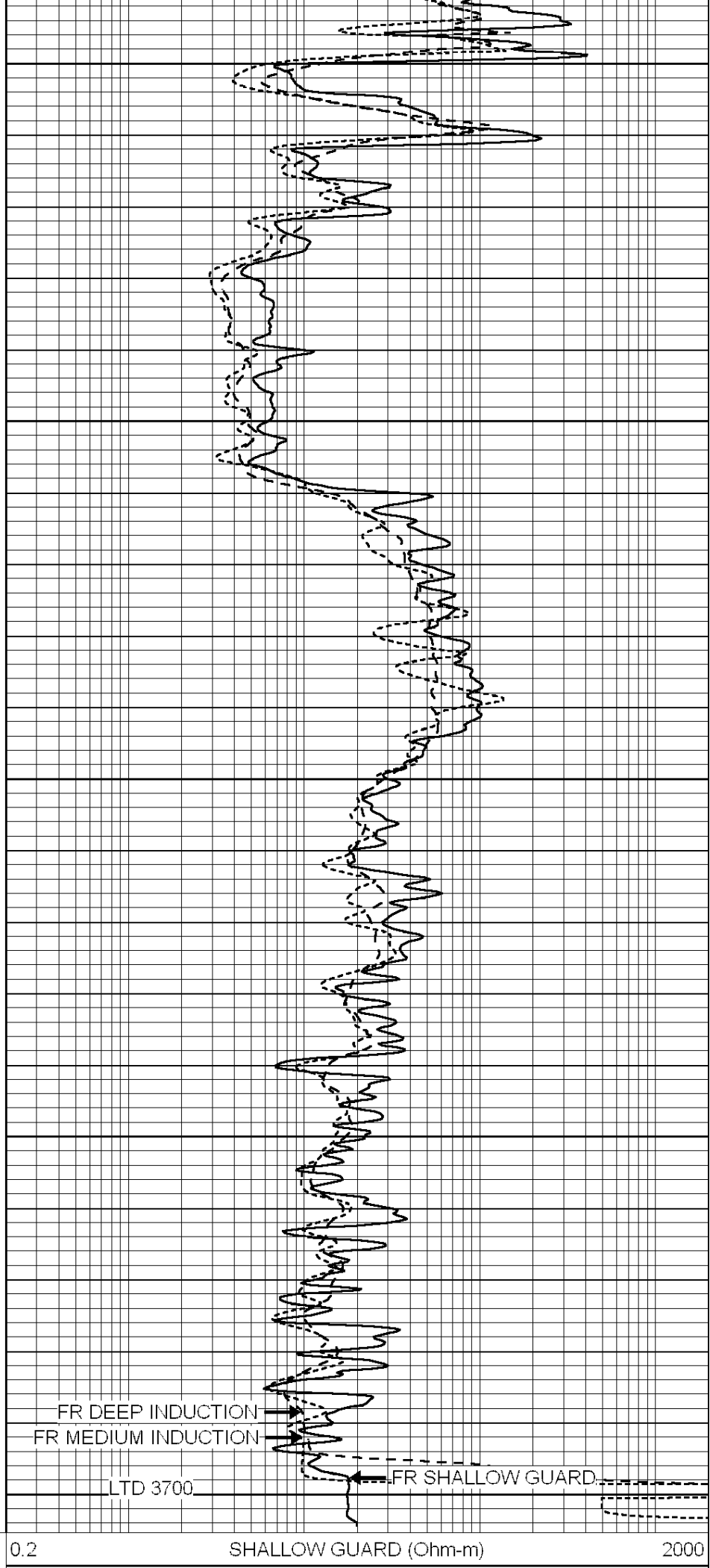
FR GR

MINMK

FR SP

RXO/RT

GAMMA RAY (GAPI)



FR DEEP INDUCTION

FR MEDIUM INDUCTION

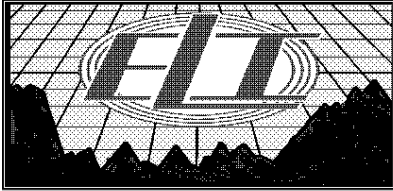
LTD 3700

FR SHALLOW GUARD

SHALLOW GUARD (Ohm-m)

-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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

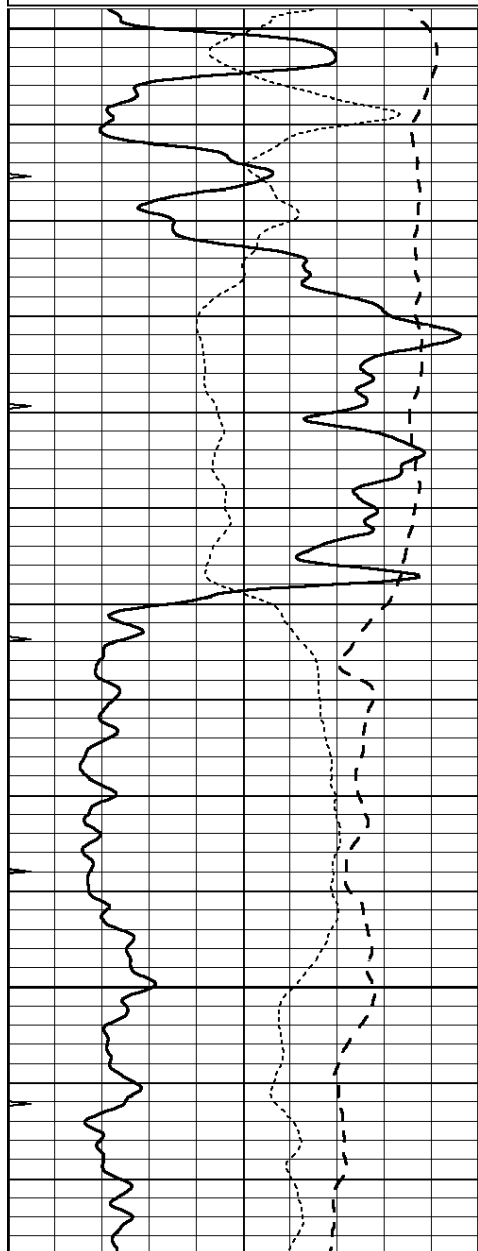


REPEAT SECTION

Database File: 3059ddn.db
 Dataset Pathname: pass2.3
 Presentation Format: _dil
 Dataset Creation: Wed Nov 14 03:33:58 2018
 Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

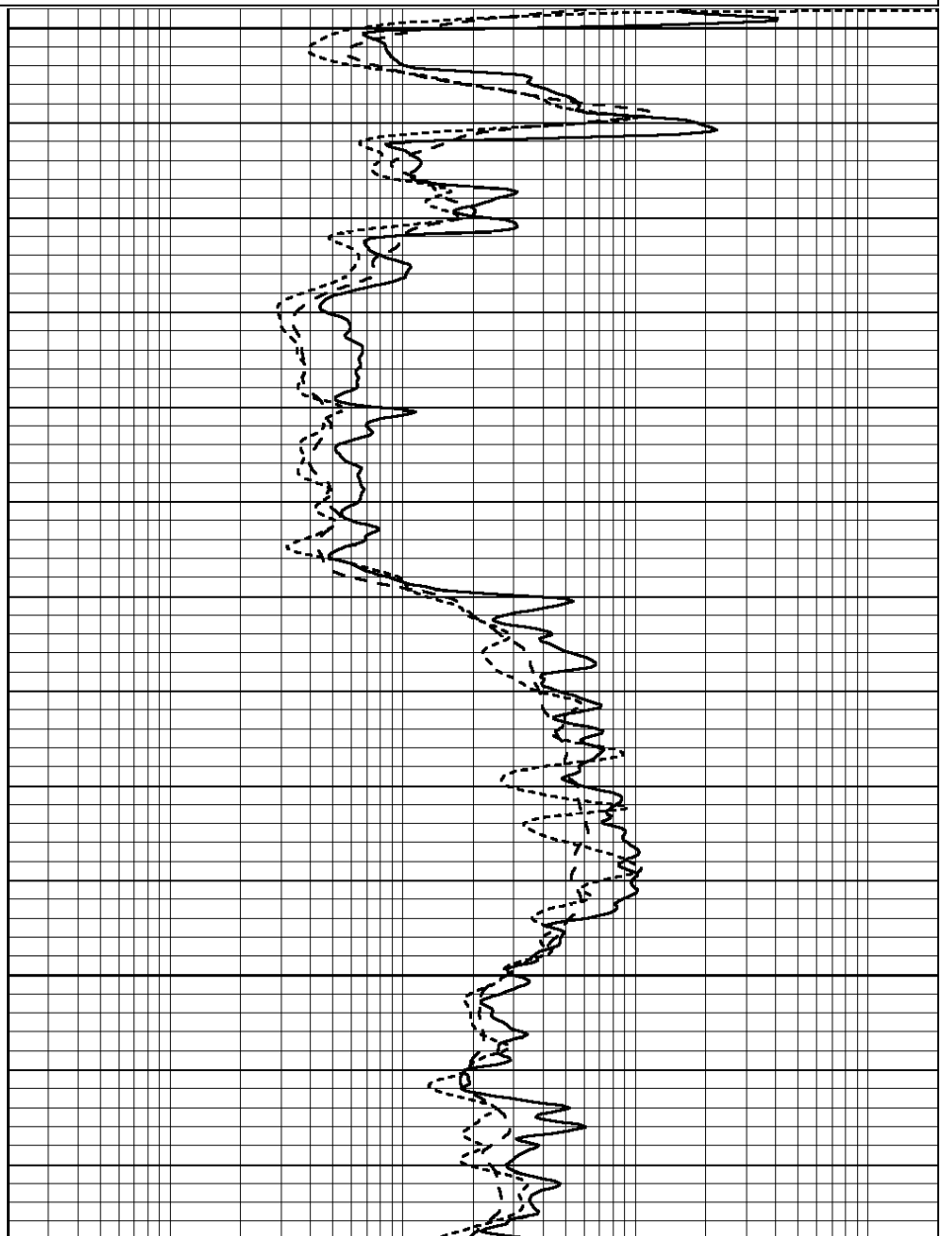
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

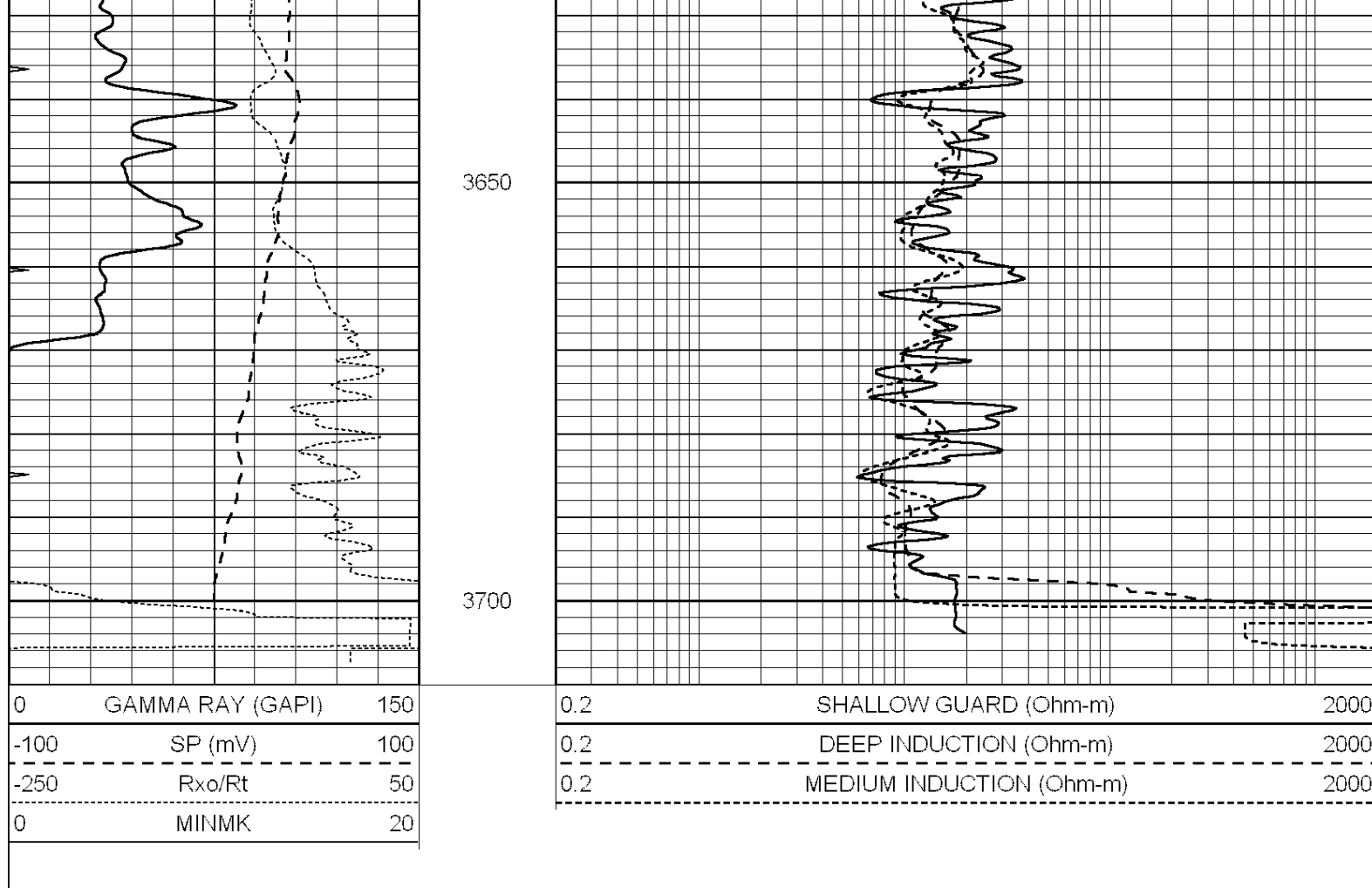


3500

3550

3600





Calibration Report								
Database File:	1598ddn.db							
Dataset Pathname:	pass4							
Dataset Creation:	Wed Aug 30 02:13:00 2017 by Log SOC 120430							
Dual Induction Calibration Report								
Serial-Model:			PROBE7-DILG					
Surface Cal Performed:			Wed Aug 30 00:06:33 2017					
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	620.000	0.000
Medium	0.039	0.728	V	0.000	464.000	mmho/m	675.000	-44.000
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		

	0.000	V		20.000	Ohm-m			
	-7.200			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: 002 Model: PRB								
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Master Calibration			Performed Mon Aug 21 11:27:42 2017					
	Background	Magnesium		Aluminum		Sandstone		
Window 1	837.1	10632.5		2945.1		12110.1		cps
Window 2	772.0	9117.4		2570.1		10197.3		cps
Window 3	631.7	4669.0		1481.9		5042.9		cps
Window 4	187.0	187.5		185.9		189.9		cps
Long Space	0.0	8345.4		1798.1		9425.3		cps
Short Space	1.1	1927.9		1285.9		2050.2		cps
Rho		1.7100		2.5960		1.3800		g/cc
Pe		0.0000		2.5700		1.5500		
Rib Angle	: 45.2	Rib Slope	: 1.008	Density/Spine Ratio			: 0.558	
Spine Angle	: 75.2	Spine Slope	: 3.790	Spine Intercept			: -19.6	

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 May 31 00:09:32 2017	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.2800	GAPI/cps