



NABORS

**COMPLETION
& PRODUCTION
SERVICES CO.**

DUAL INDUCTION LOG

Company		RITCHIE EXPLORATION, INC.	
Well		#1 SHULER 17 B	
Field		WILDCAT	
County		SHERIDAN	
State		KANSAS	
Company		RITCHIE EXPLORATION, INC.	
Well		#1 SHULER 17 B	
Field		WILDCAT	
County		SHERIDAN	
State		KANSAS	
Location:		API # : 15-179-21409-0000	
Permanent Datum		GROUND LEVEL Elevation 2843	
Log Measured From		KELLY BUSHING 5' A.G.L.	
Drilling Measured From		KELLY BUSHING	
SEC 17 TWP 6S RGE 29W		Other Services CDL/CNL MEL	
Date		9/2/15	
Run Number		ONE	
Depth Driller		4555	
Depth Logger		4557	
Bottom Logged Interval		4555	
Top Log Interval		00	
Casing Driller		8 5/8" @ 328	
Casing Logger		327	
Bit Size		7 7/8"	
Type Fluid in Hole		CHEMICAL MUD	
Density / Viscosity		9.3/55	
pH / Fluid Loss		10.5/8.0	
Source of Sample		FLOWLINE	
Rm @ Meas. Temp		1.20 @ 85F	
Rmt @ Meas. Temp		.90 @ 85F	
Rmc @ Meas. Temp		1.44 @ 85F	
Source of Rmt / Rmc		MEASUREMENT	
Rm @ BHT		.84 @ 121F	
Time Circulation Stopped		2 HOURS	
Time Logger on Bottom			
Maximum Recorded Temperature		121F	
Equipment Number		4010	
Location		HAYS, KANSAS	
Recorded By		JASON CAPPELLUCCI	
Witnessed By		ADAM ELDANI	

<<< Fold Here >>>

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 NABORS, HAYS, KS. (785) 628-6395
DIRECTIONS:
SELDEN, KS. - 1 WEST - 100 FT. SOUTH - EAST INTO

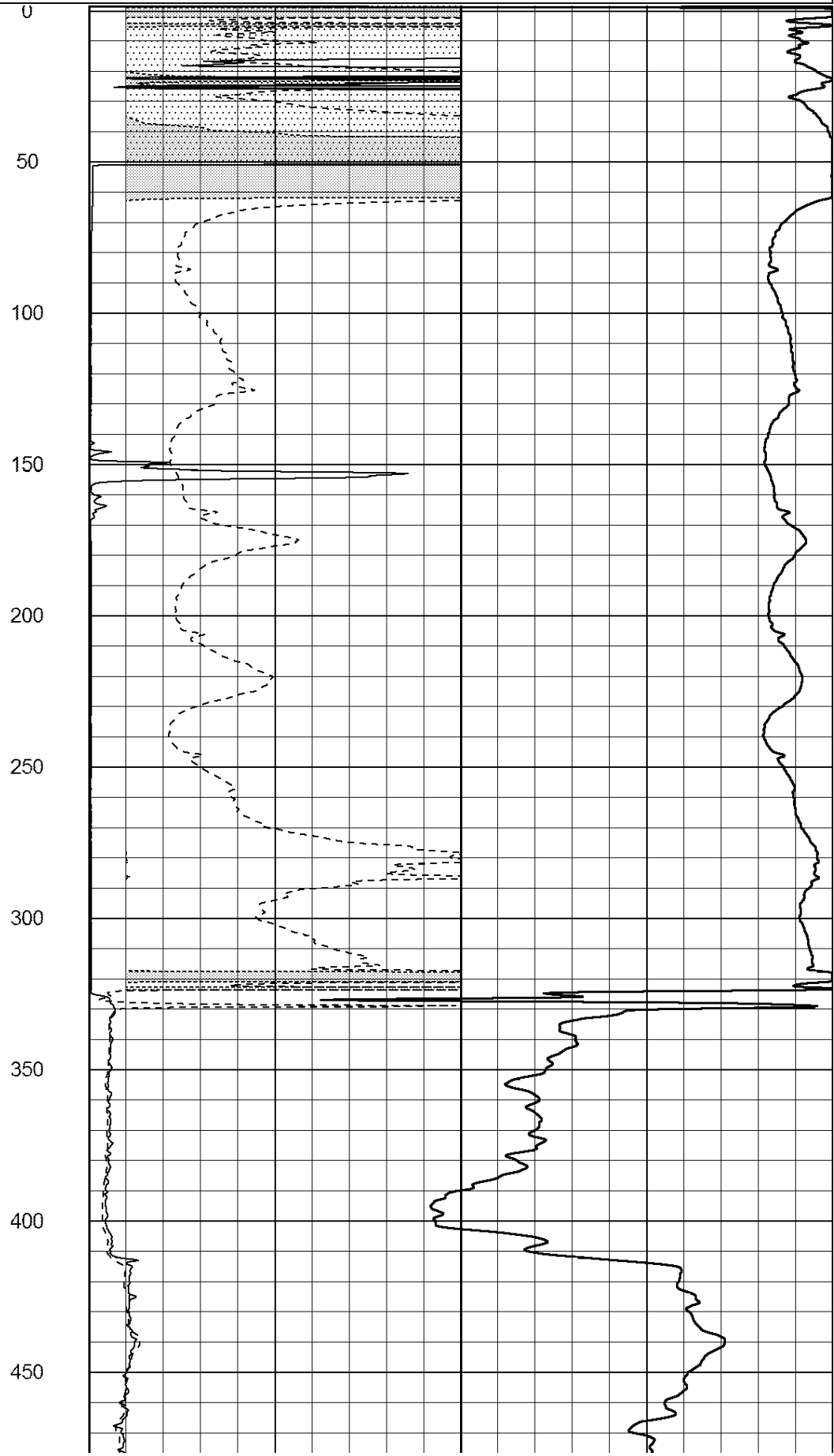
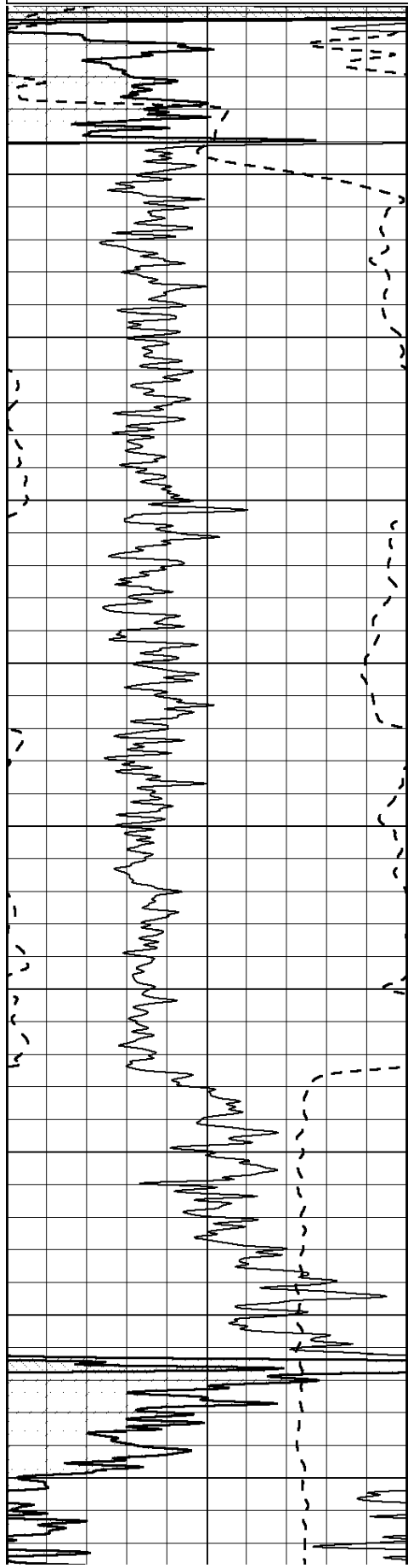
Database File: 30518ddn.db
Dataset Pathname: pass3.4
Presentation Format: _dil2
Dataset Creation: Wed Sep 02 12:31:16 2015 by Calc Open-Cased 090629
Charted by: Depth in Feet scaled 1:600

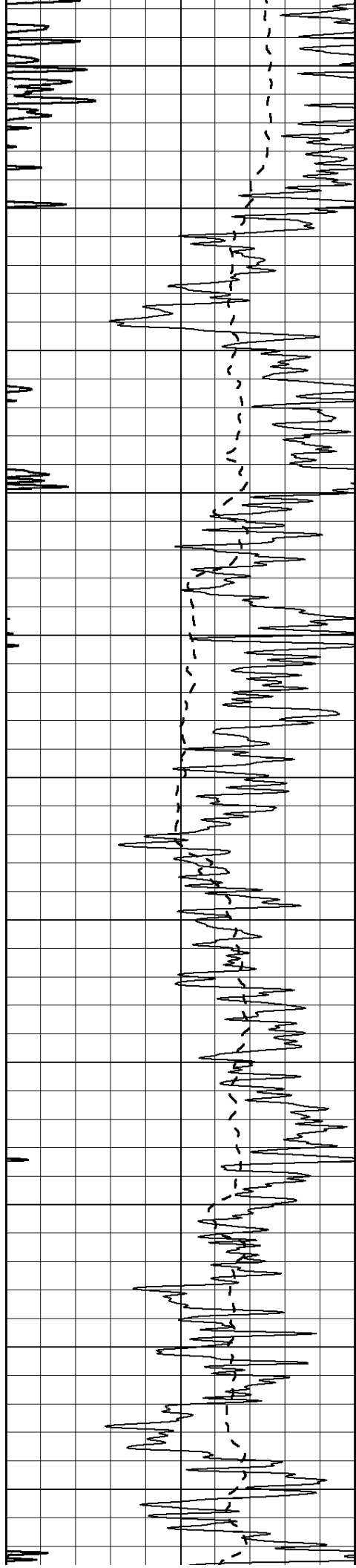
Charted by: Depth in feet scaled 1:500		
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

0	RLL3 (Ohm-m)	50	
0	RILD (Ohm-m)	50	

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

50	RLL3 X10 (Ohm-m)	500	





500

550

600

650

700

750

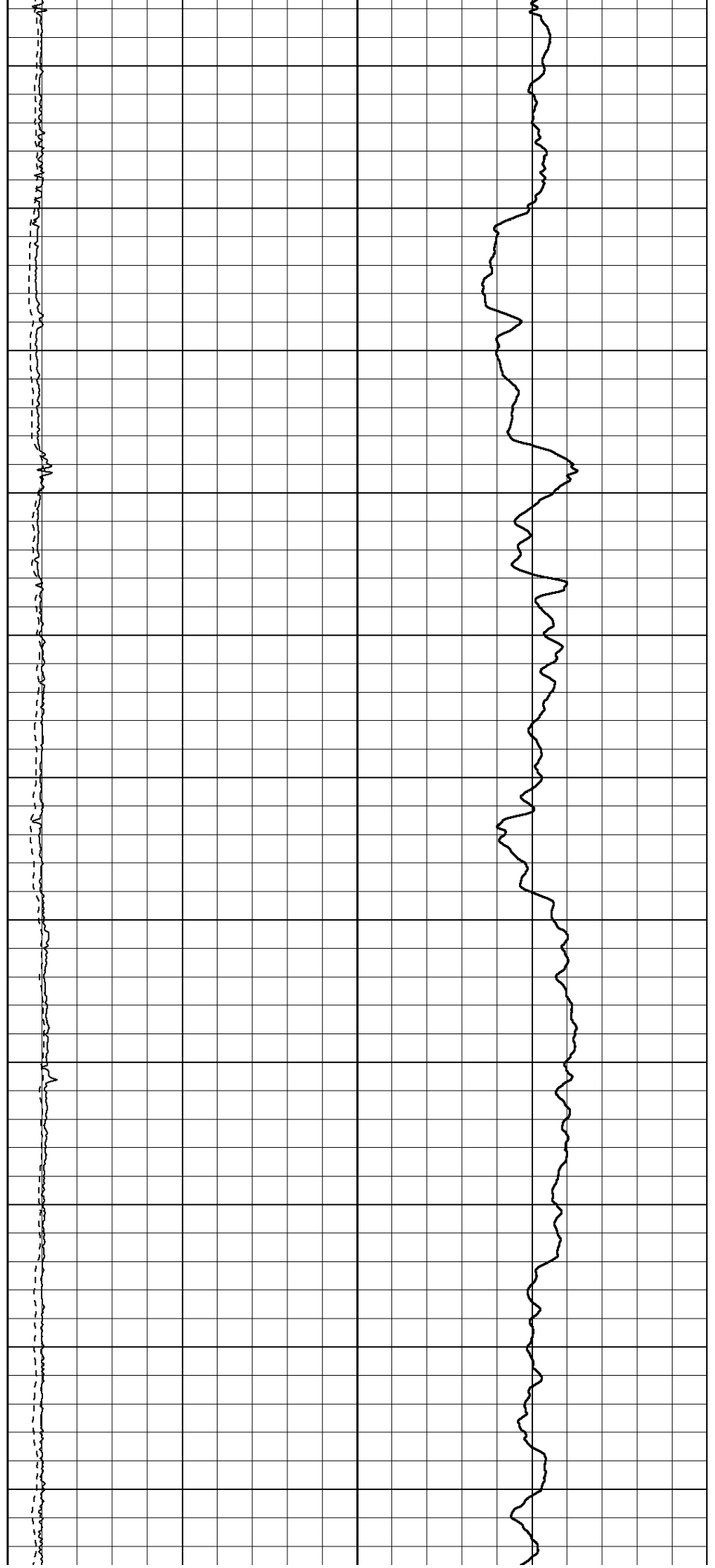
800

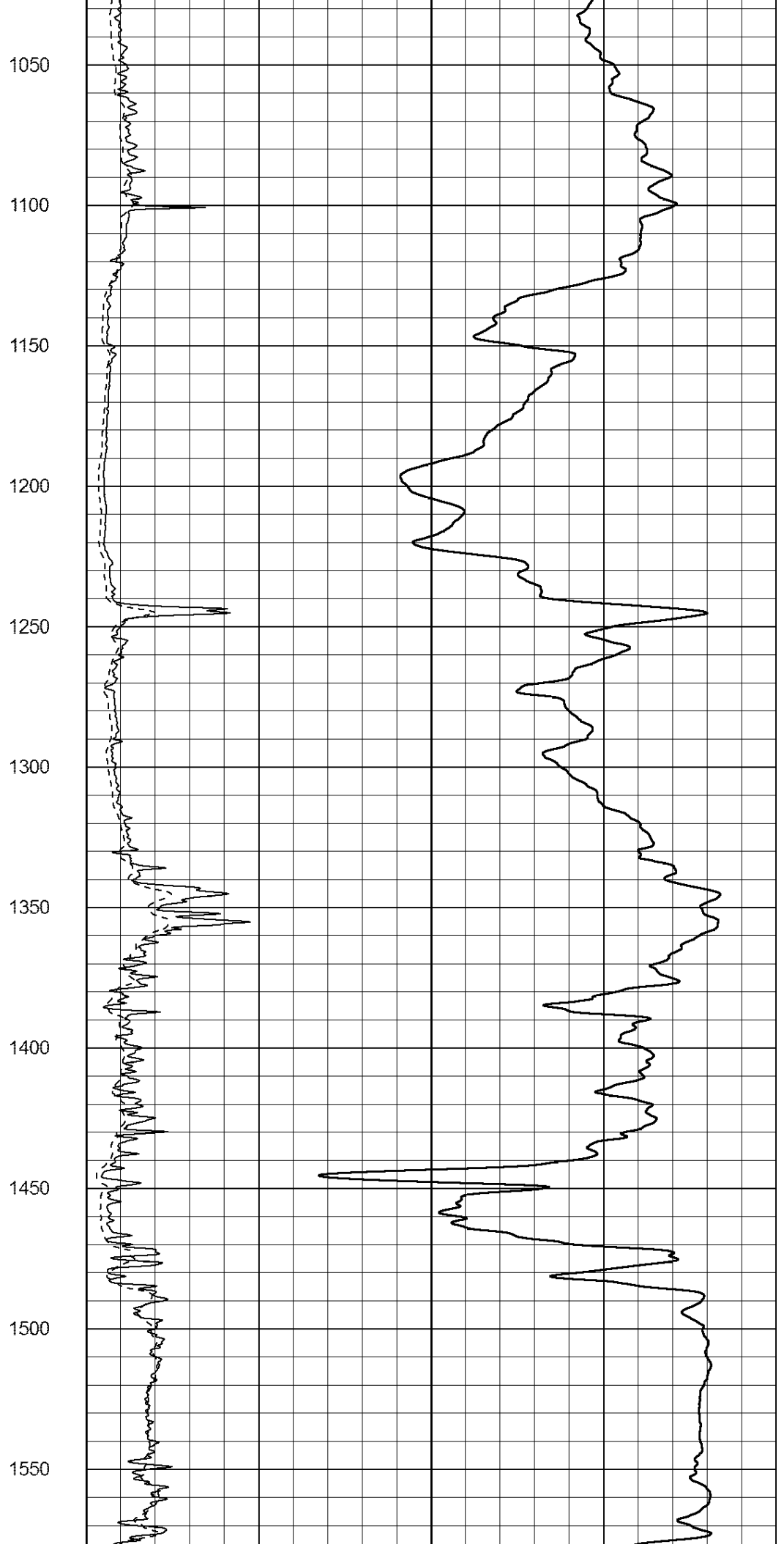
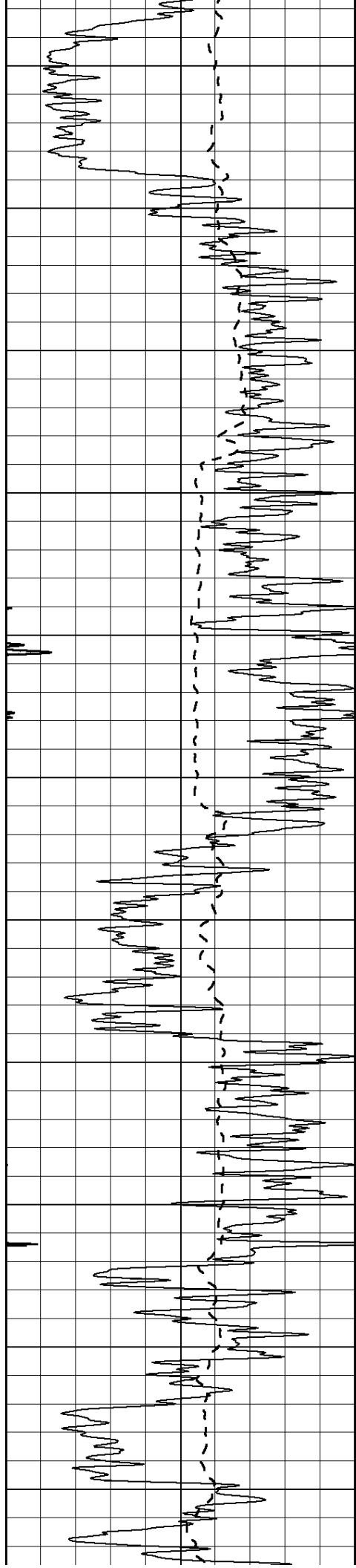
850

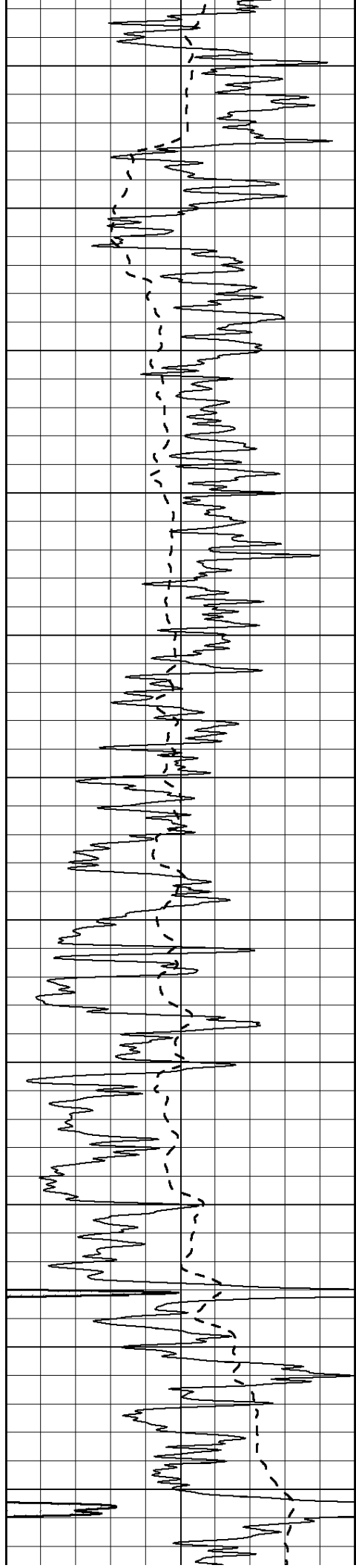
900

950

1000







1600

1650

1700

1750

1800

1850

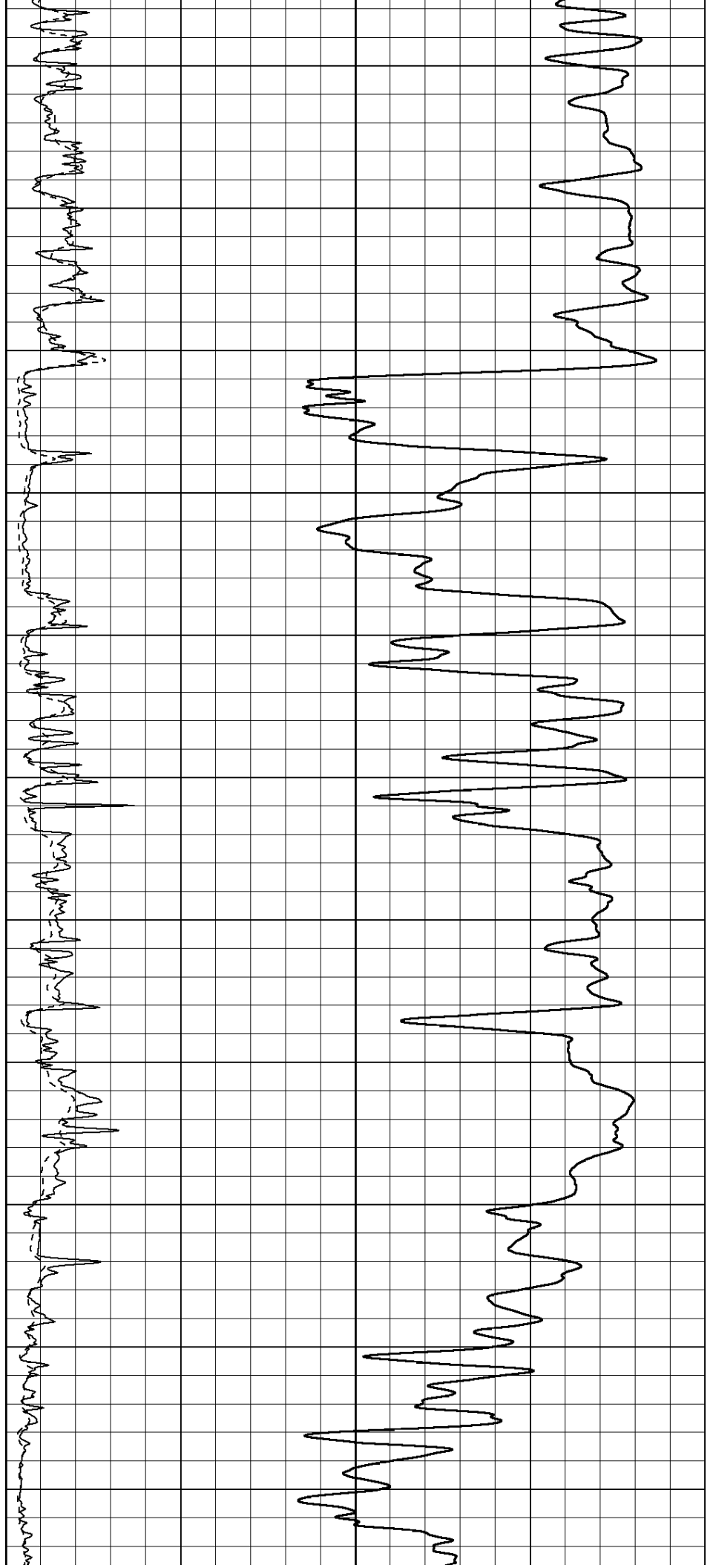
1900

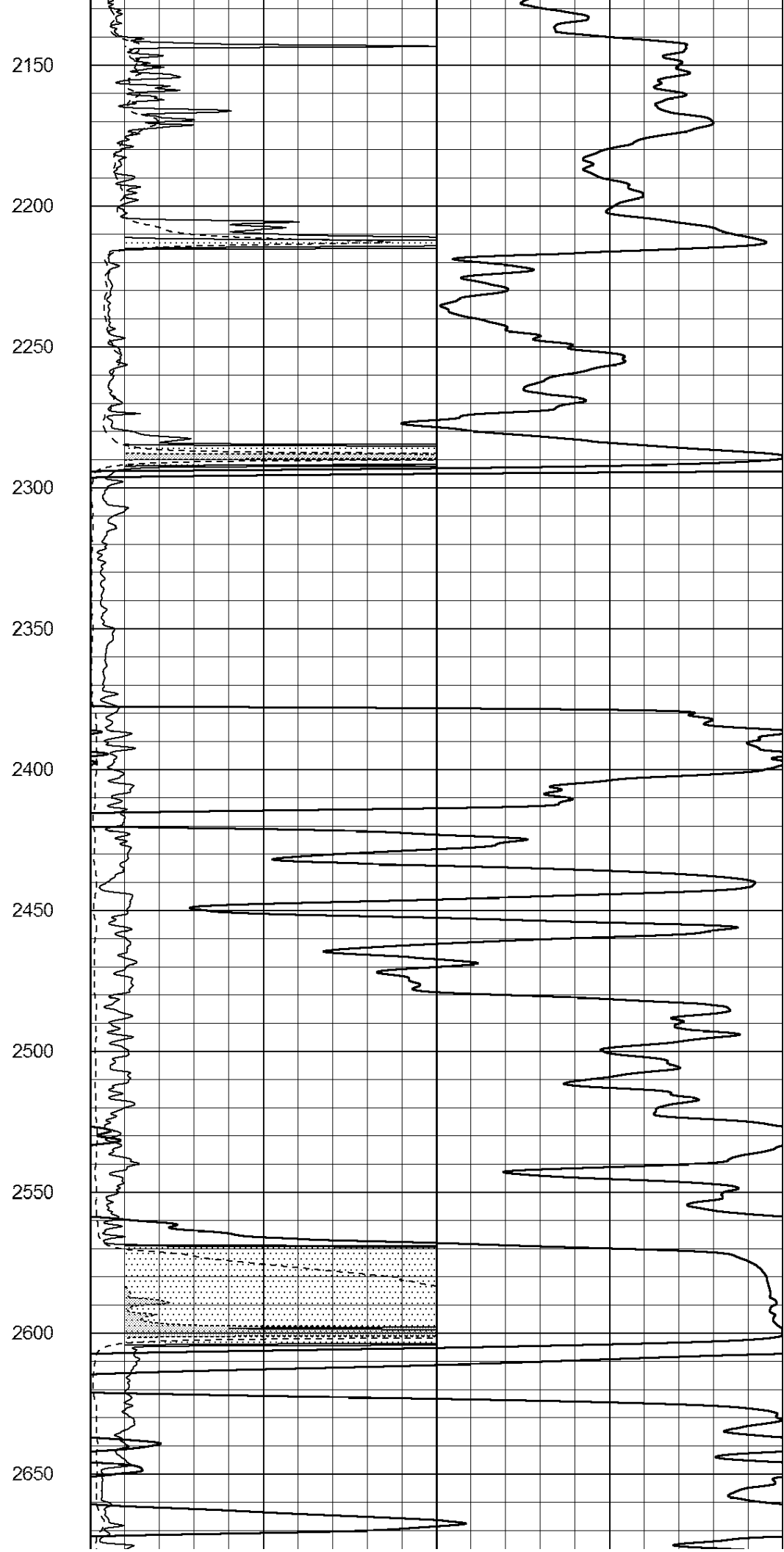
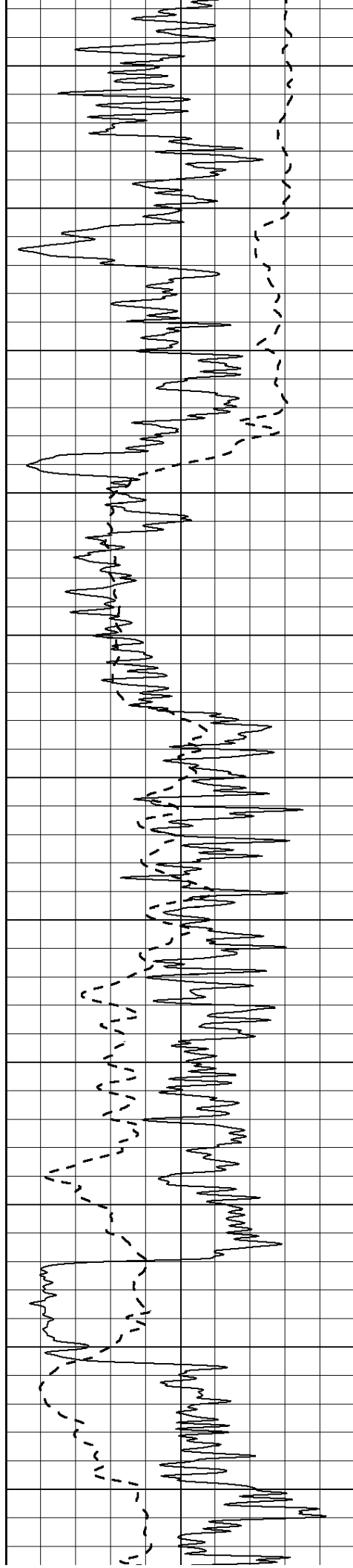
1950

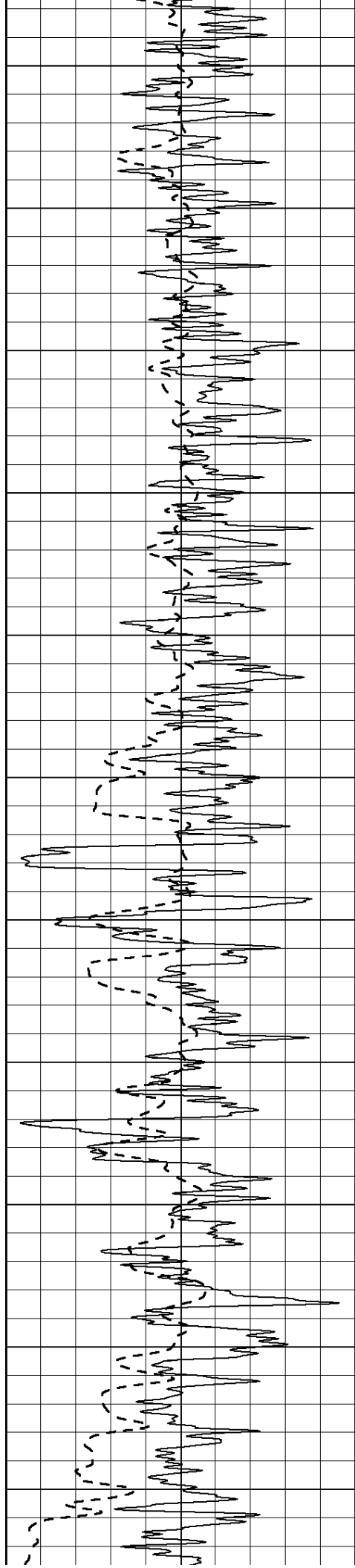
2000

2050

2100







2700

2750

2800

2850

2900

2950

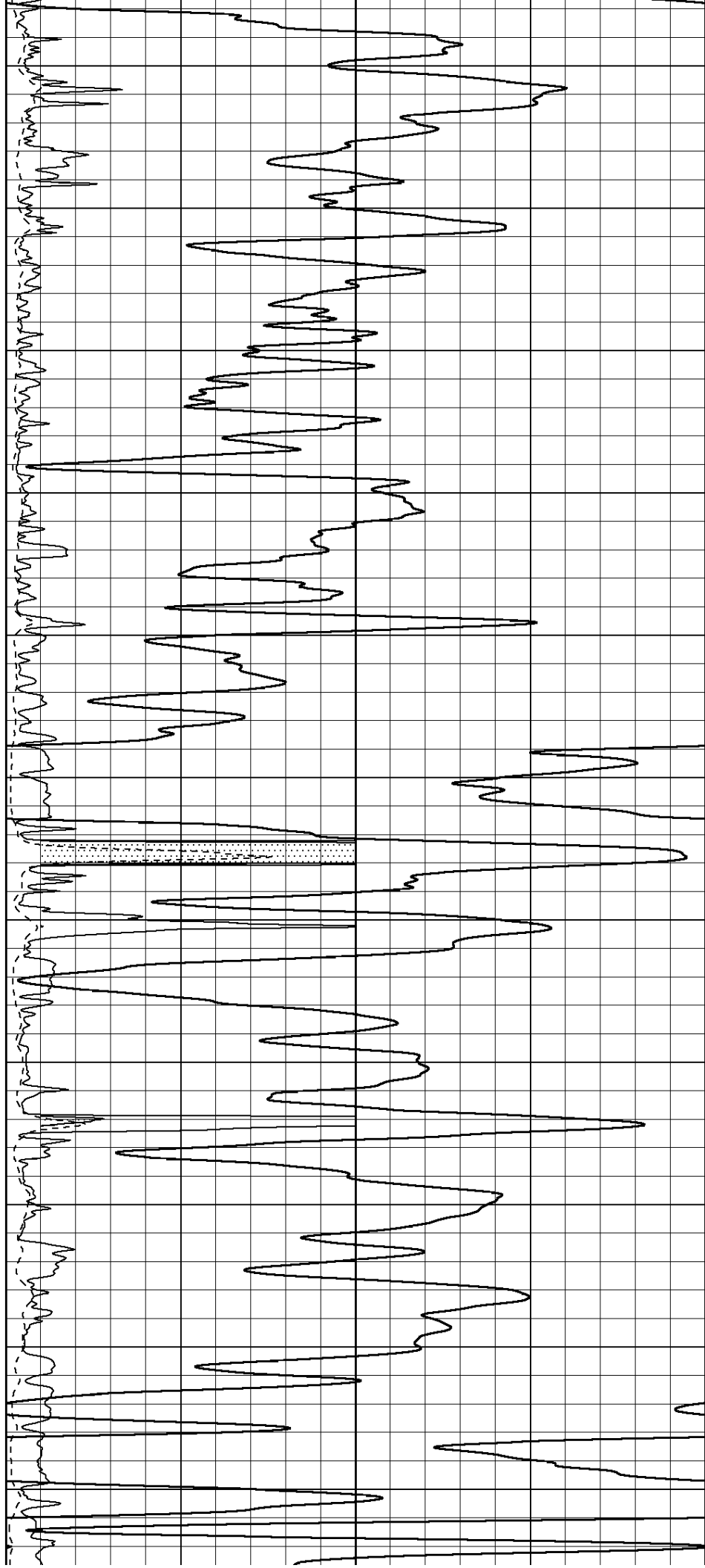
3000

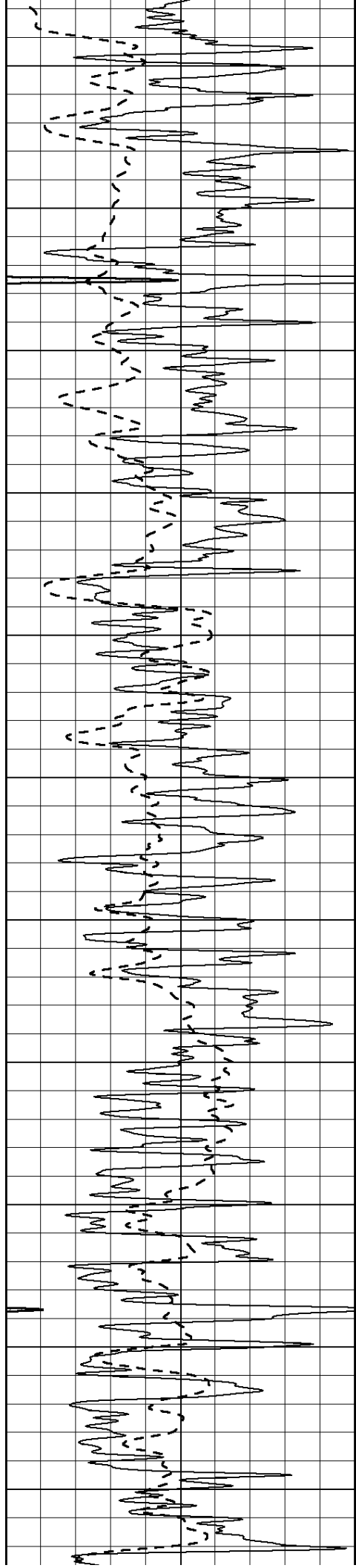
3050

3100

3150

3200





3250

3300

3350

3400

3450

3500

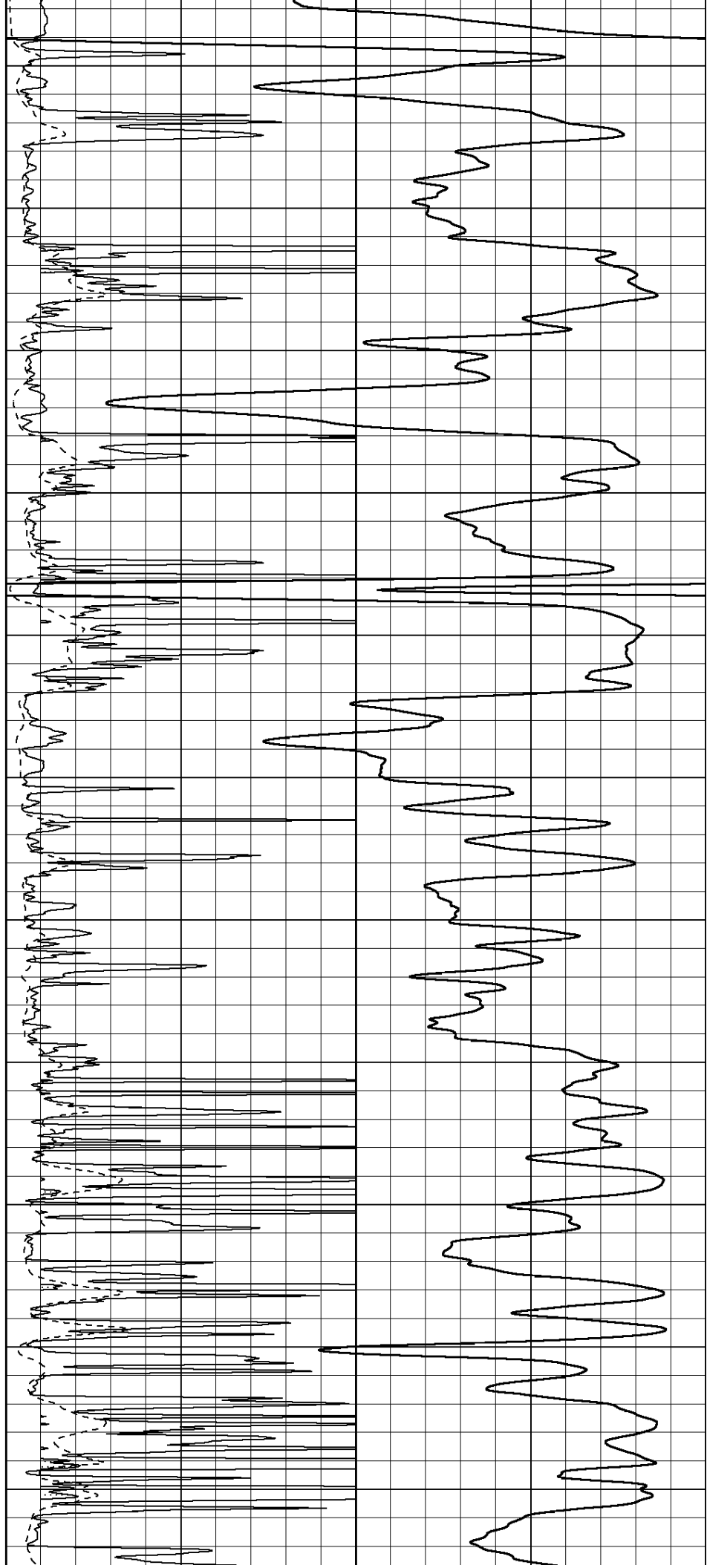
3550

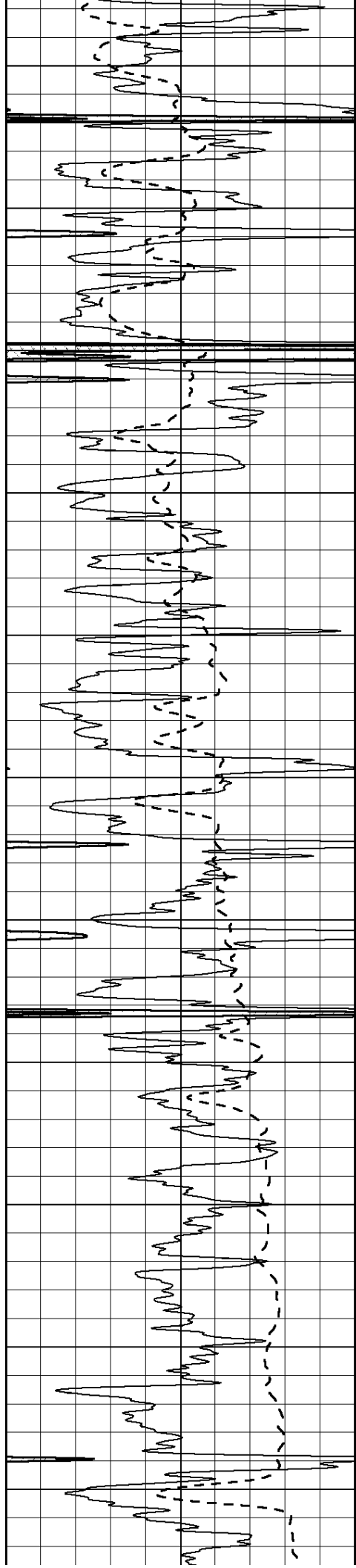
3600

3650

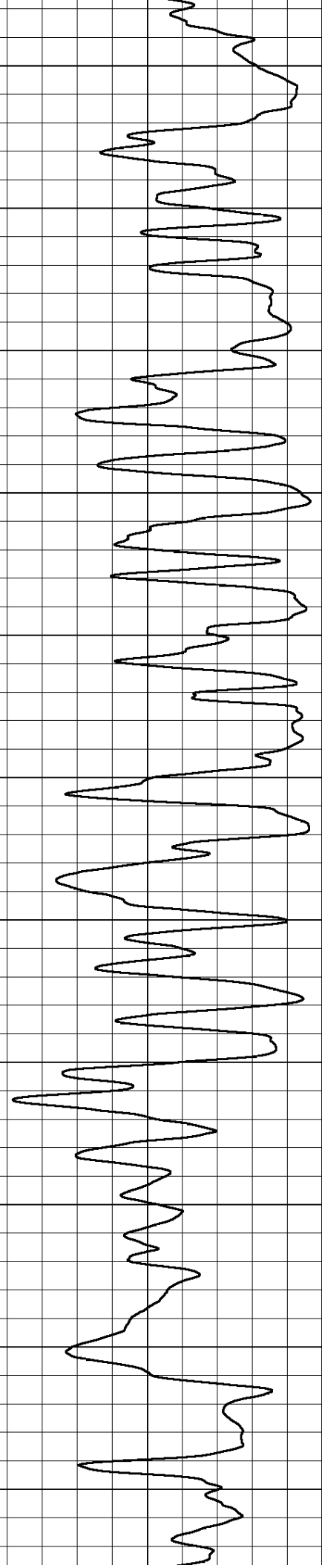
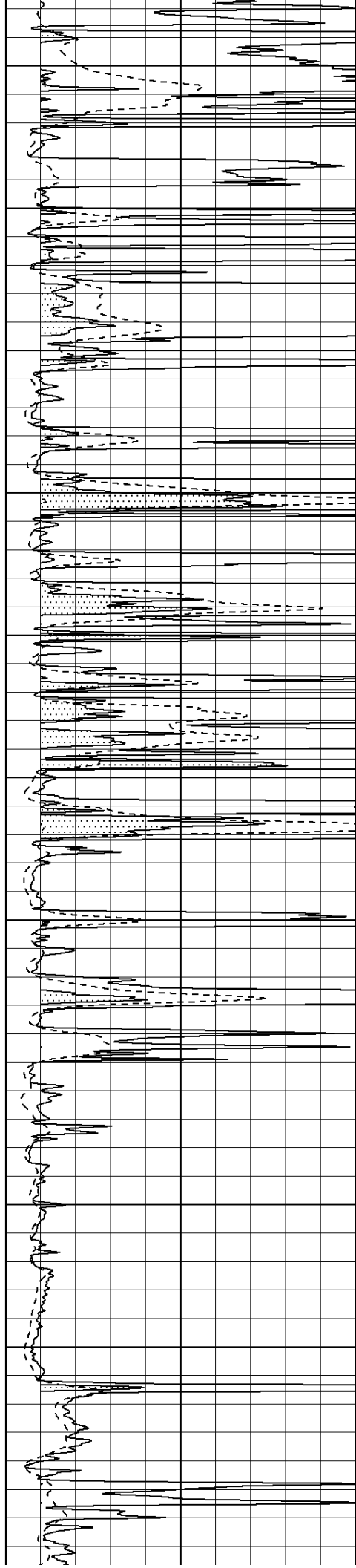
3700

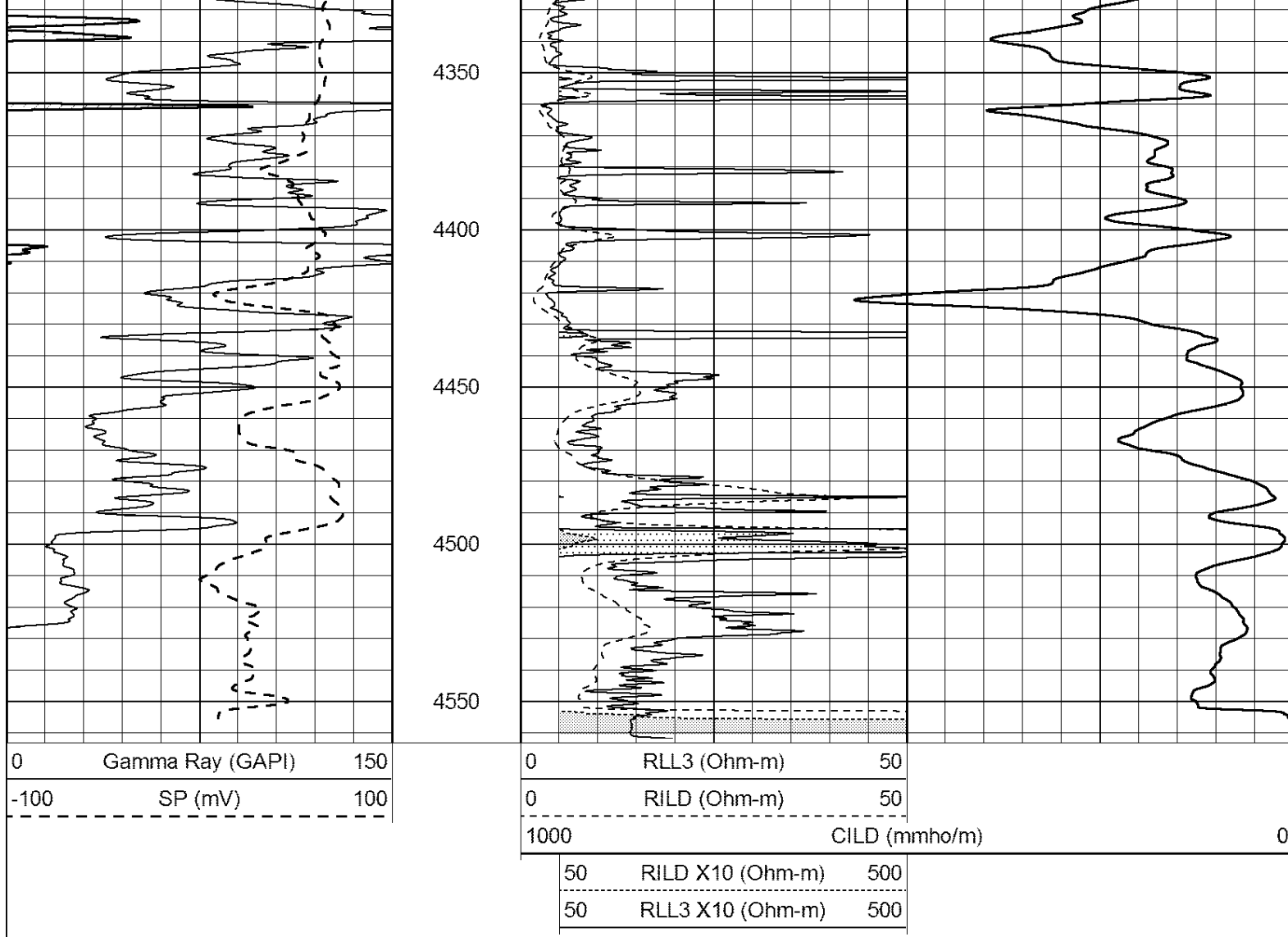
3750





3800
3850
3900
3950
4000
4050
4100
4150
4200
4250
4300



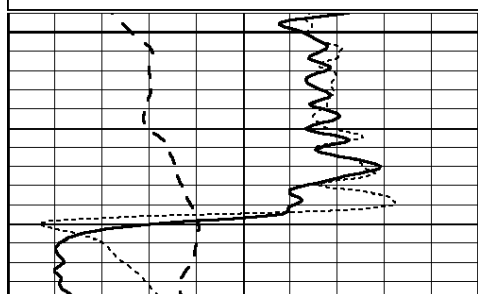


ANHYDRITE

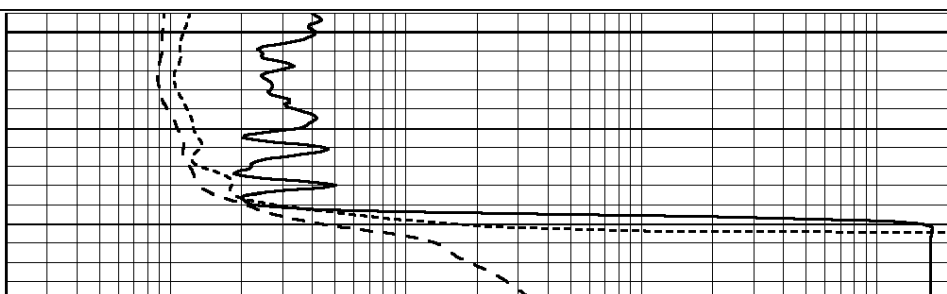
Database File: 30518ddn.db
 Dataset Pathname: pass3.3
 Presentation Format: _dil
 Dataset Creation: Wed Sep 02 11:56:48 2015 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

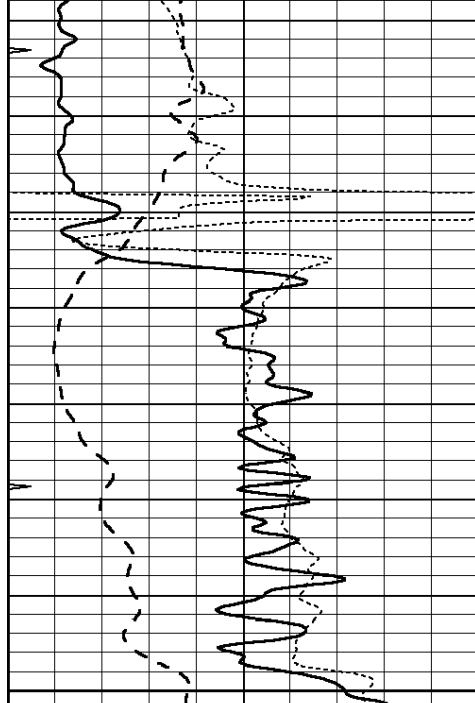
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



2550

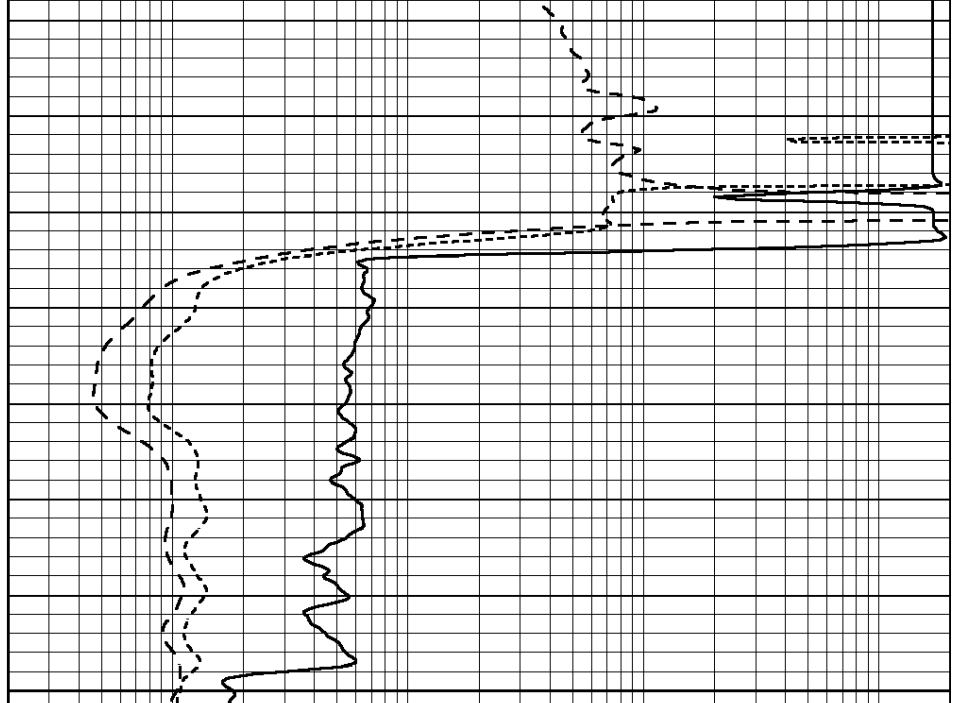




2600

2650

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



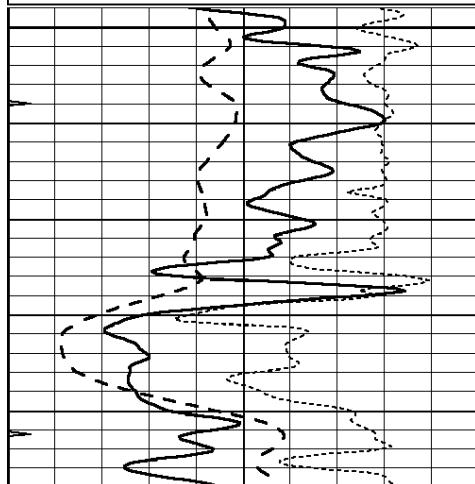
NABORS
COMPLETION
& PRODUCTION
SERVICES CO.

MAIN SECTION

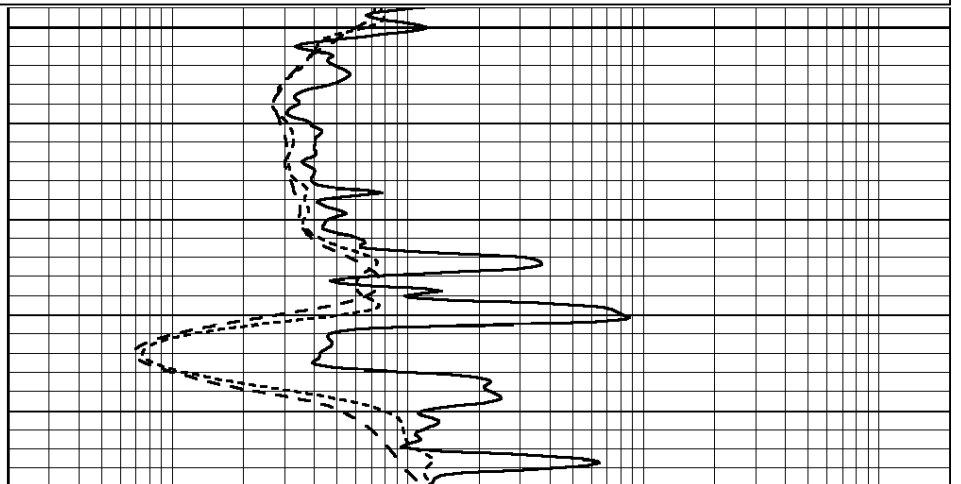
Database File: 30518ddn.db
Dataset Pathname: pass3.2
Presentation Format: _dil
Dataset Creation: Wed Sep 02 11:48:04 2015
Charted by: Depth in Feet scaled 1:240

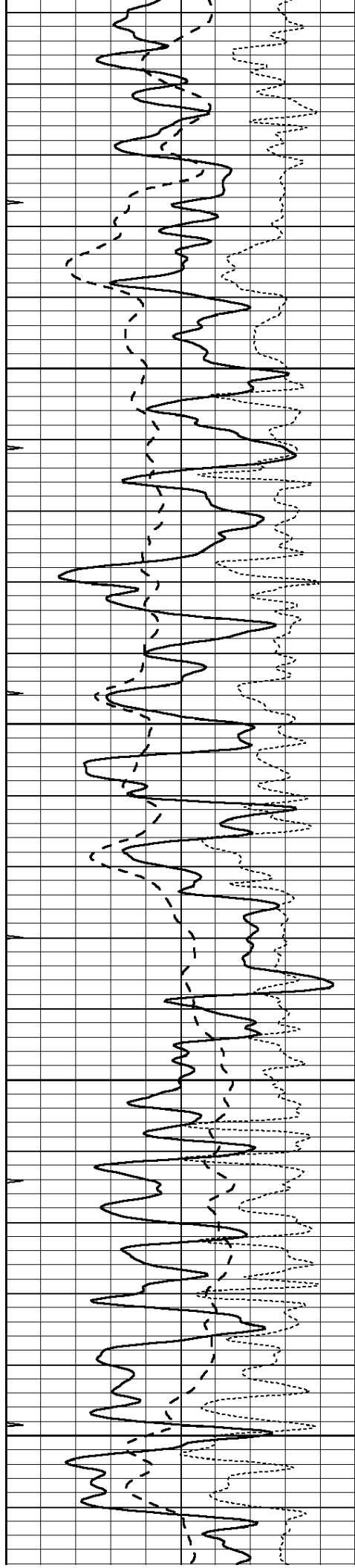
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



3400





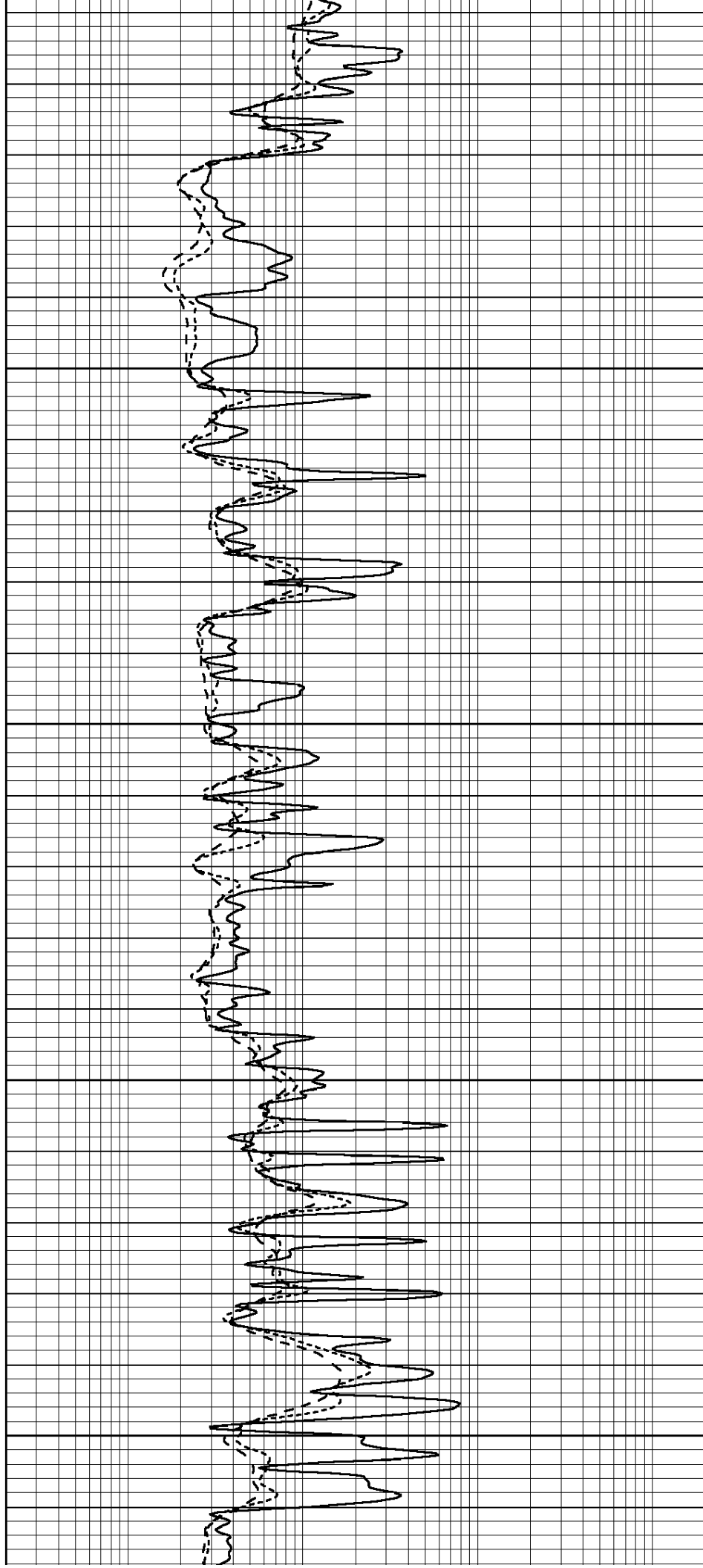
3450

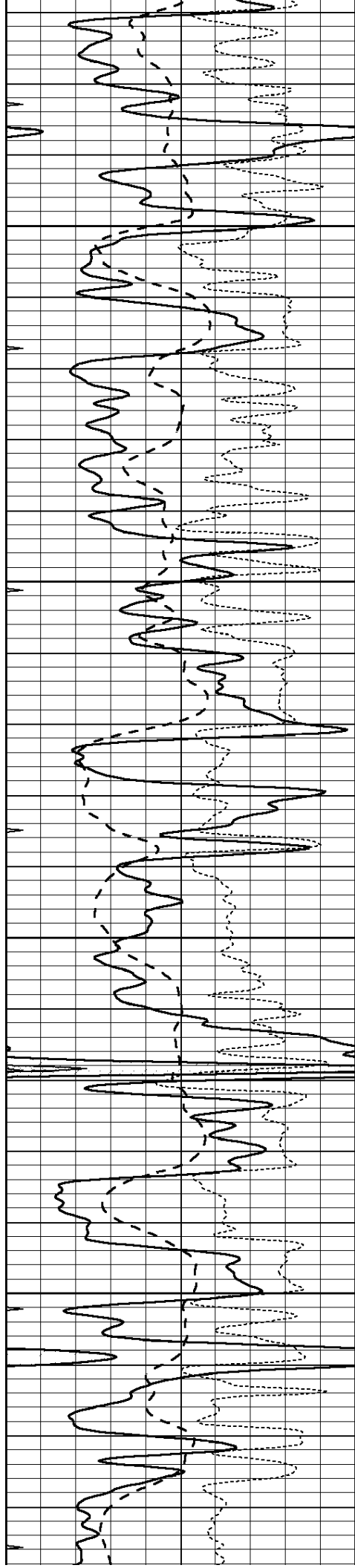
3500

3550

3600

3650



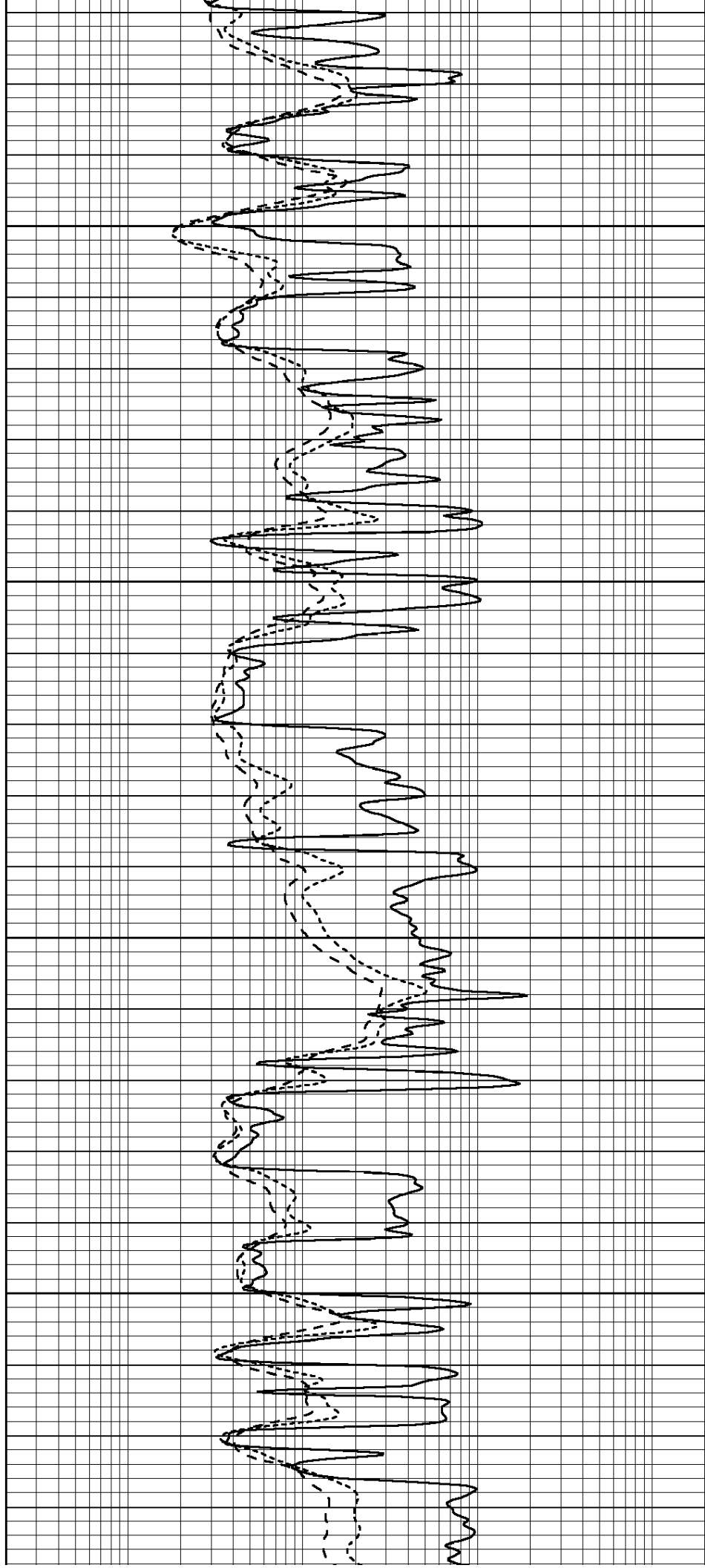


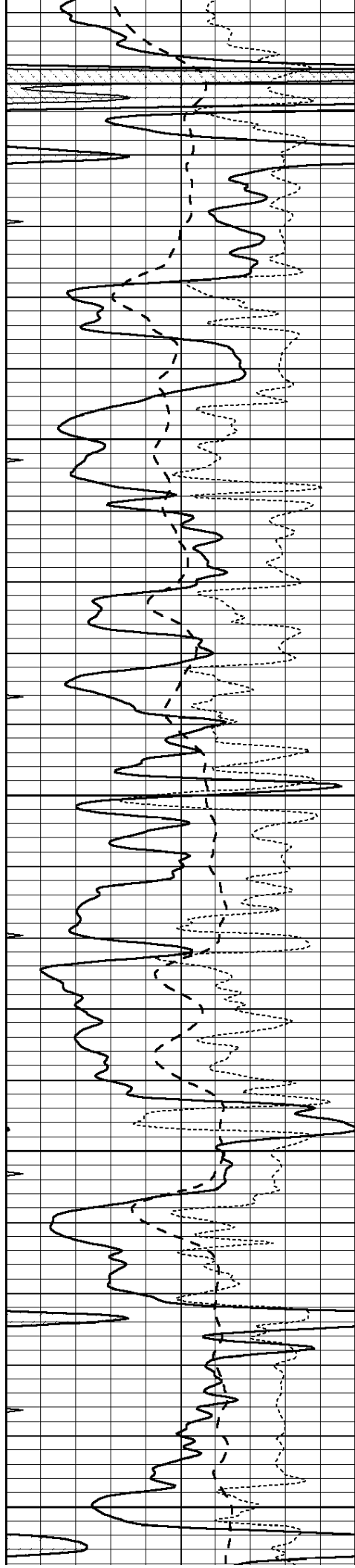
3700

3750

3800

3850





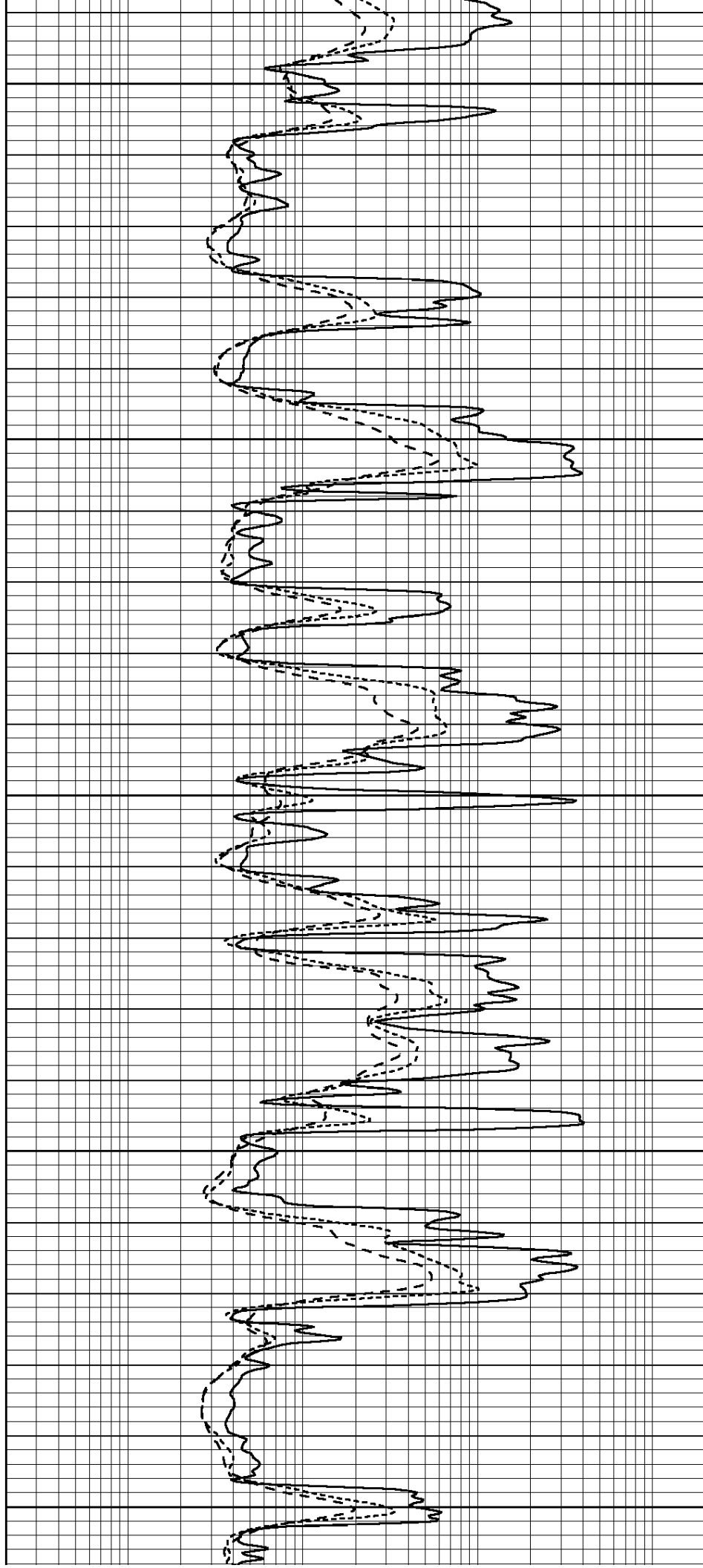
3900

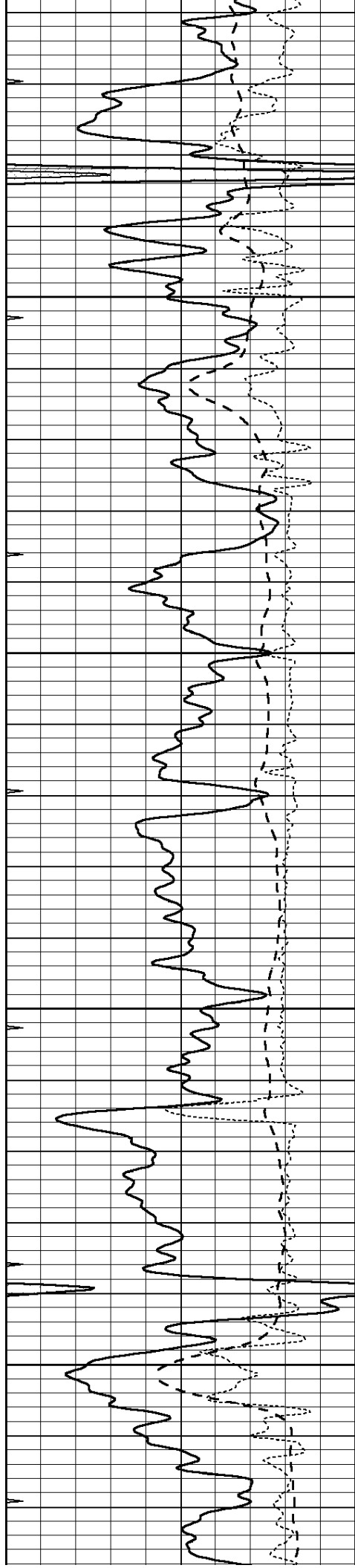
3950

4000

4050

4100



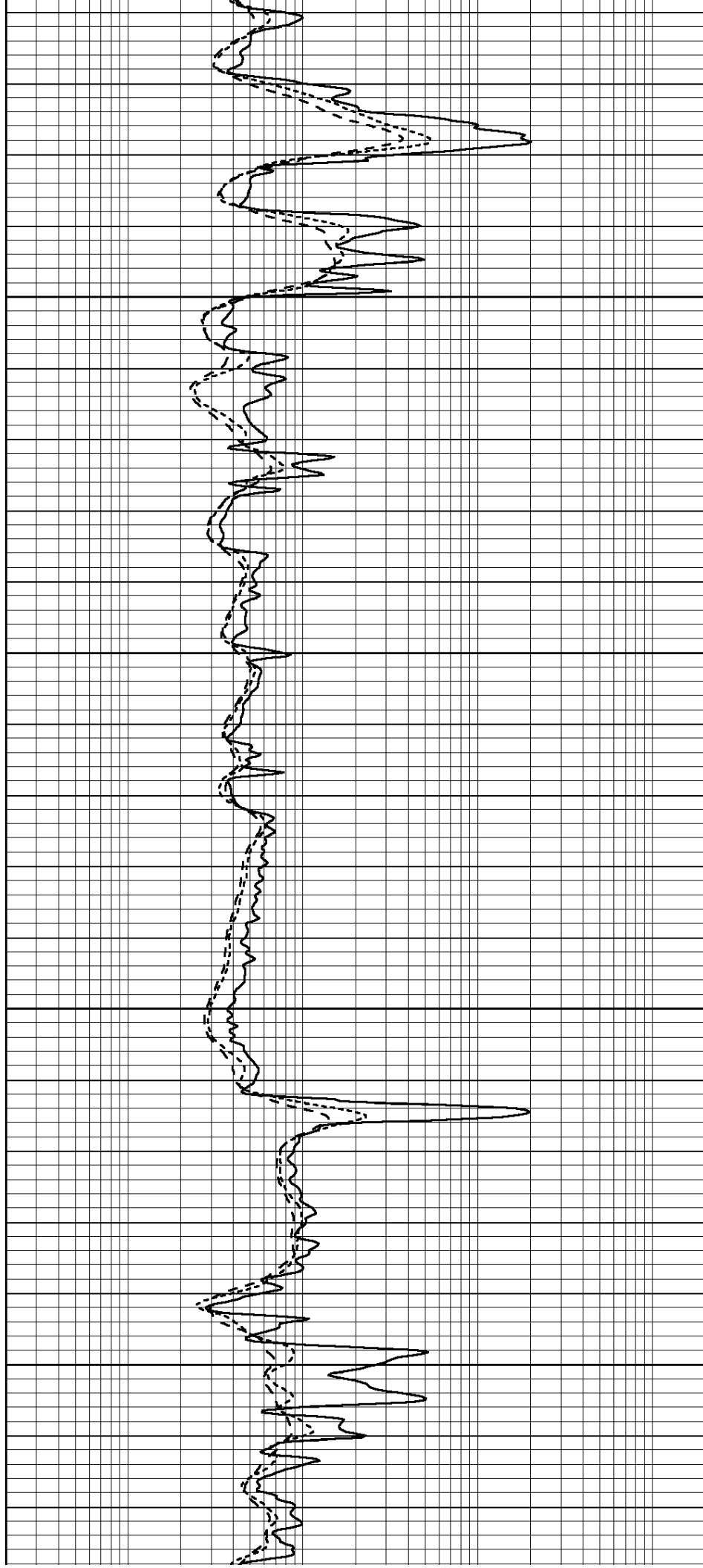


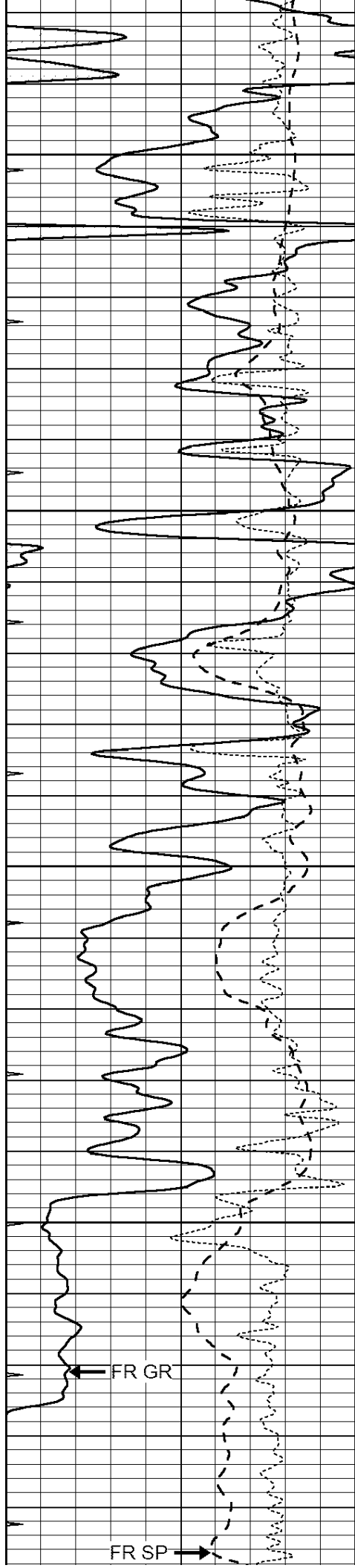
4150

4200

4250

4300





4350

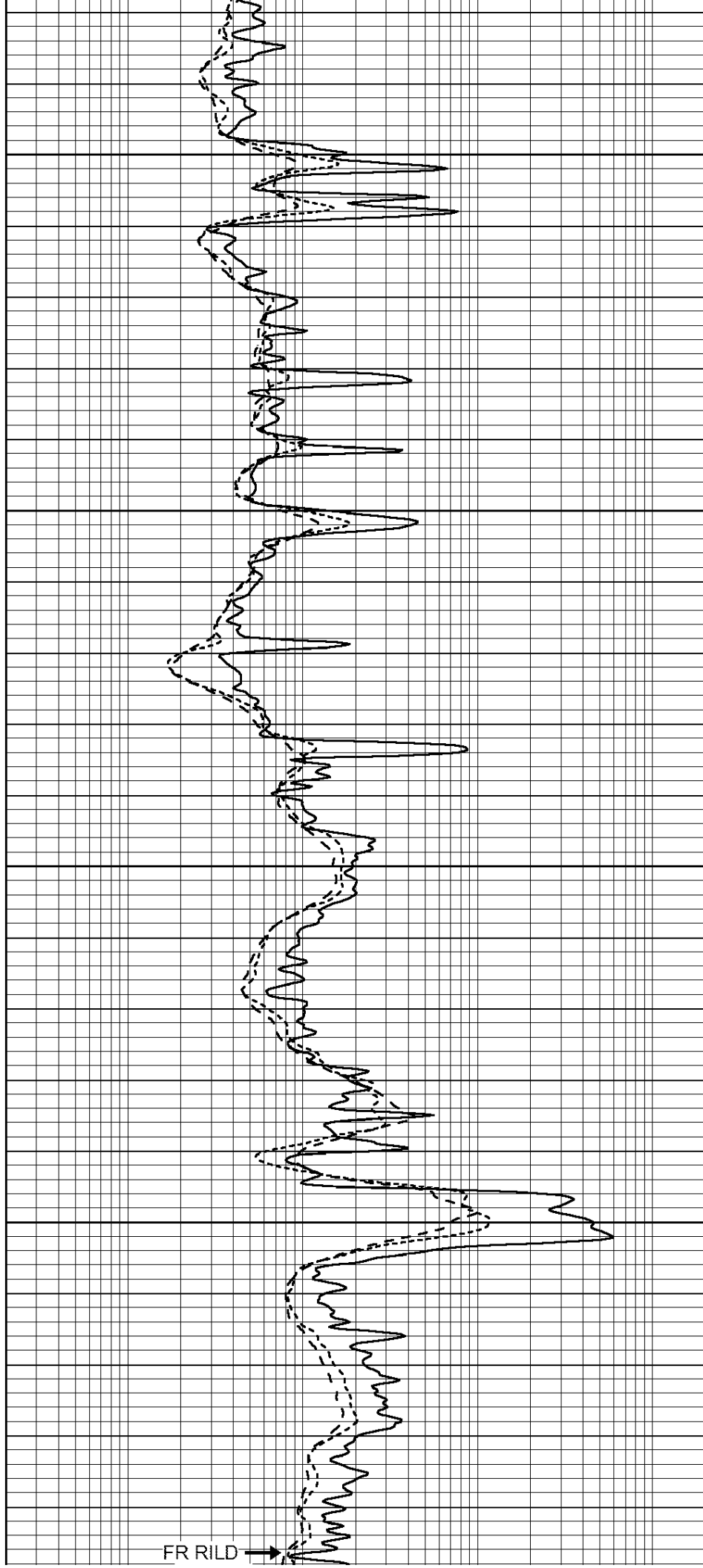
4400

4450

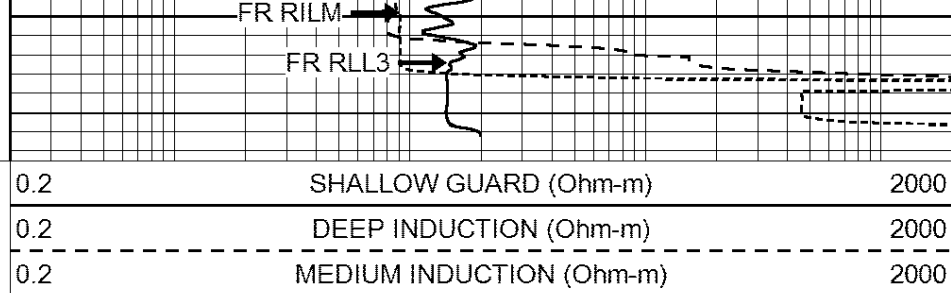
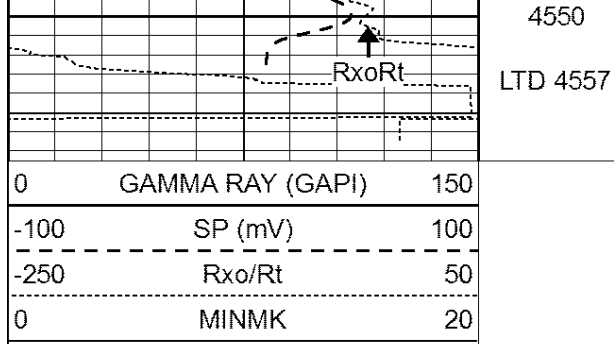
4500

FR GR

FR SP

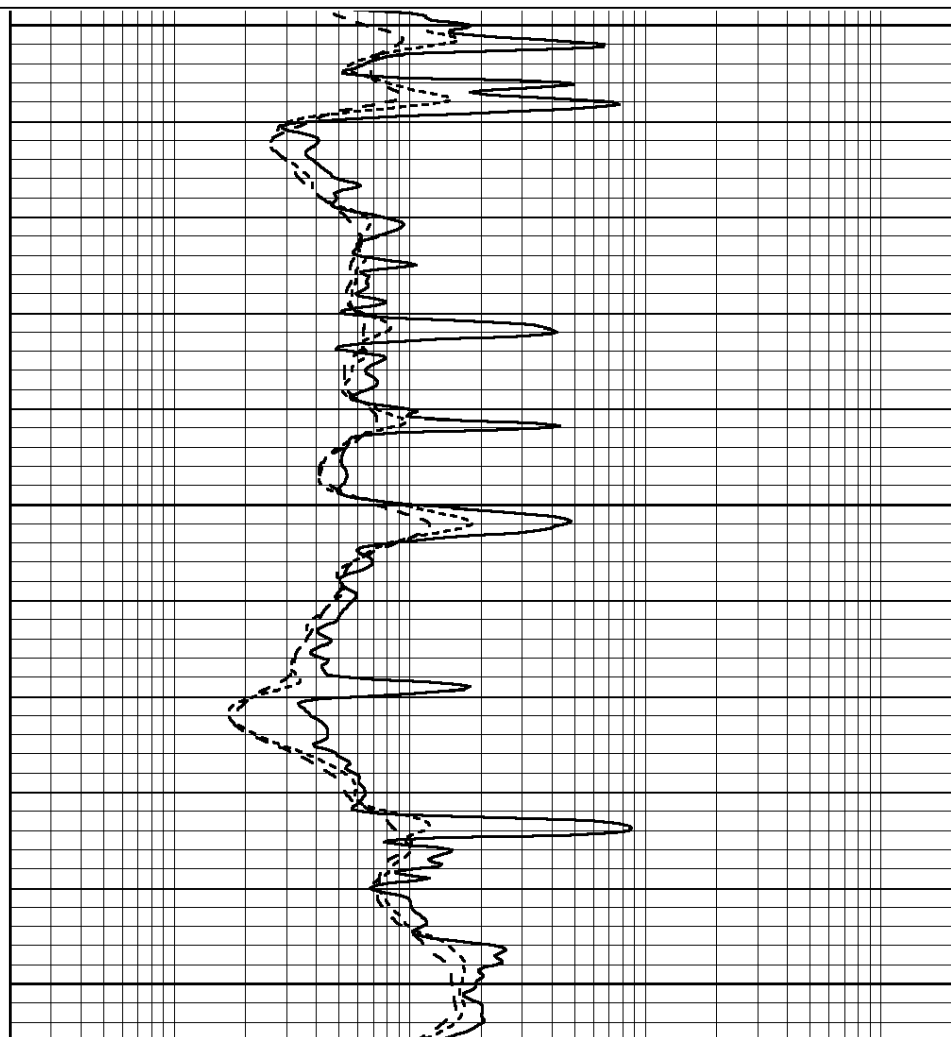
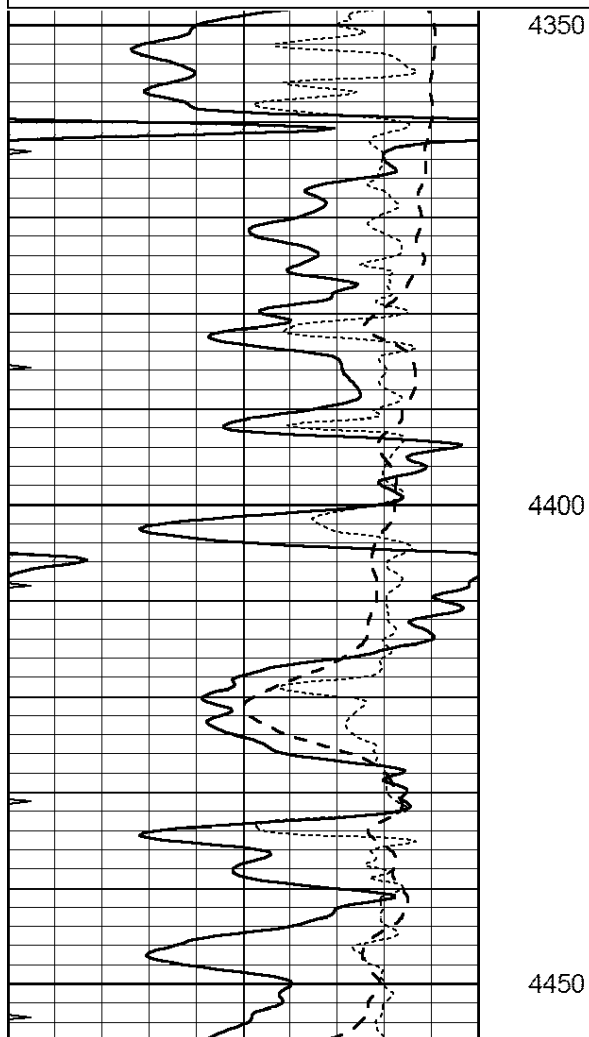
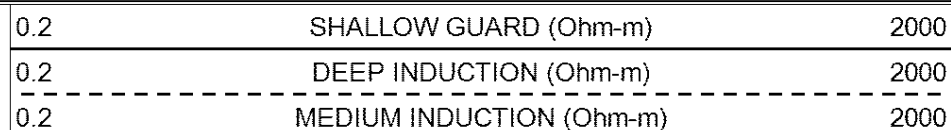
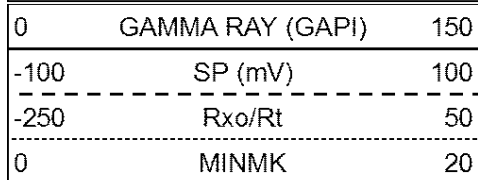


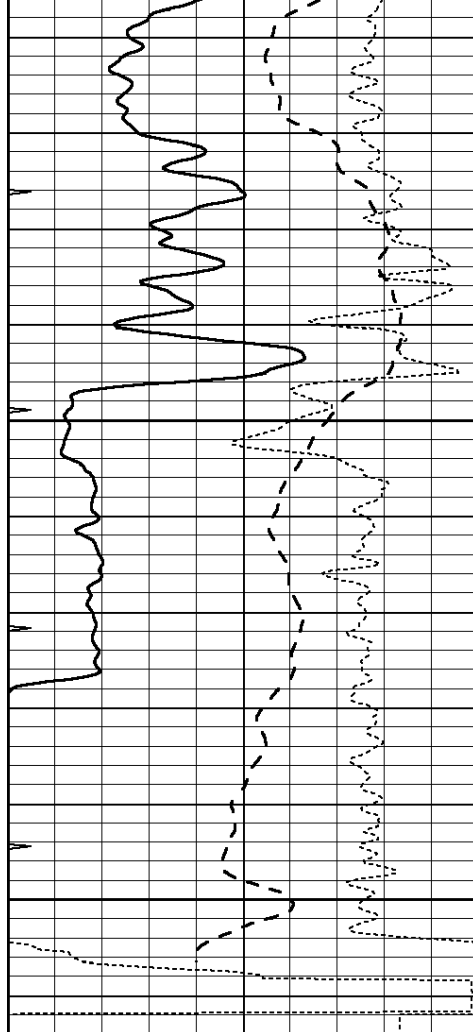
FR RILD



REPEAT SECTION

Database File: 30518ddn.db
 Dataset Pathname: pass2.1
 Presentation Format: _dil
 Dataset Creation: Wed Sep 02 11:28:57 2015 by Calc Open-Cased 090629
 Charted by: Depth in Feet scaled 1:240

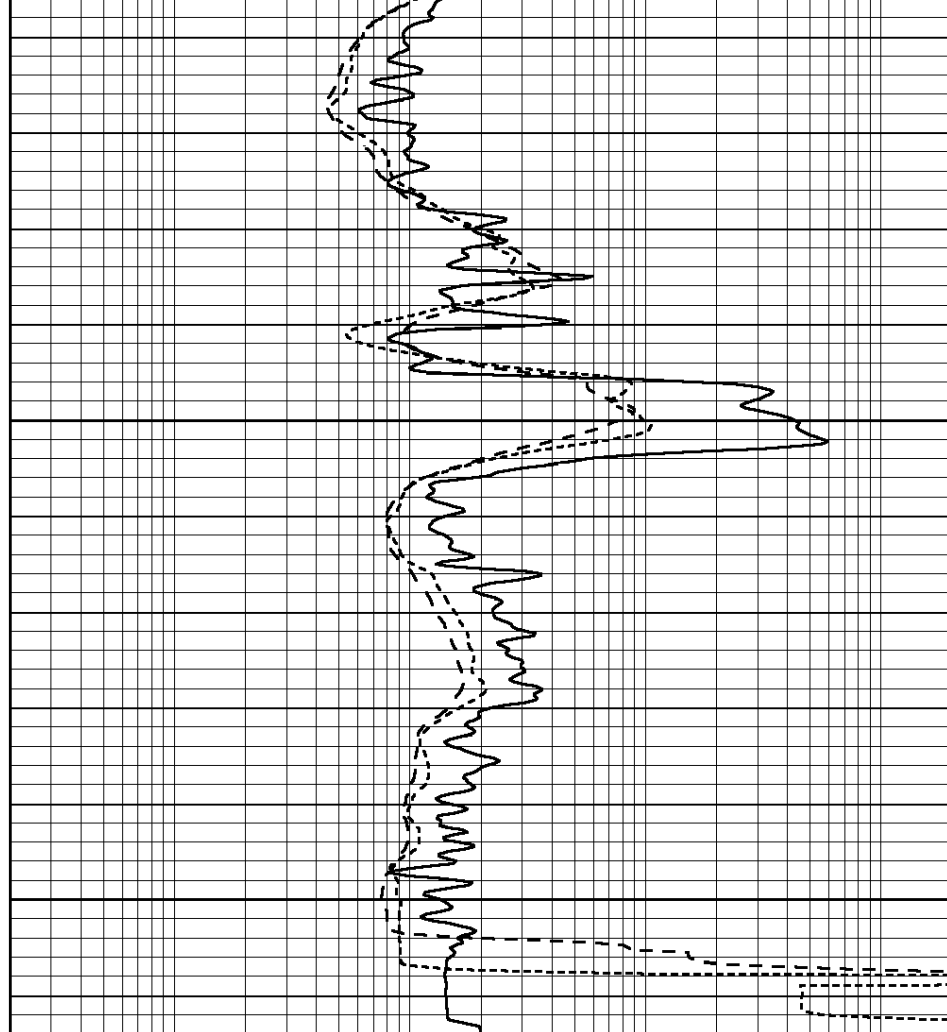




0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

4500

4550



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: 30518ddn.db
 Dataset Pathname: pass2.1
 Dataset Creation: Wed Sep 02 11:28:57 2015 by Calc Open-Cased 090629

Dual Induction Calibration Report

Serial-Model: PROBE8-DILG
 Surface Cal Performed: Sun May 10 19:54:09 2015
 Downhole Cal Performed: Mon Jul 28 11:08:27 2008
 After Survey Verification Performed: Mon Jul 28 11:08:27 2008

Surface Calibration

Readings				References			Results	
Loop:	Air	Loop		Air	Loop		m	b
Deep	0.015	0.648	V	0.000	400.000	mmho/m	620.000	0.000
Medium	0.029	0.796	V	0.000	464.000	mmho/m	590.000	-12.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.017	0.657	V	0.000	400.000	mmho/m	625.153	-10.619
Medium	0.016	0.757	V	0.000	464.000	mmho/m	625.992	-9.739

Downhole Calibration			Readings		References		Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	0.000	mmho/m	2.011	405.777	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	7.590	503.393	mmho/m	1.000	0.000
LL3		7.500	V		1500.000	Ohm-m		
		0.000	V		20.000	Ohm-m		
		-7.200	V		3800.000	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: 006			Model: PRB					

Master Calibration			Performed Wed Mar 12 14:26:38 2014					
	Background	Magnesium	Aluminum	Sandstone				
Window 1	1296.6	7199.0	2625.4	7833.2				cps
Window 2	1218.8	5956.6	2257.8	6372.0				cps
Window 3	926.7	2990.0	1318.7	3107.7				cps
Window 4	314.3	319.6	320.3	326.2				cps
Long Space	0.0	4737.9	1039.0	5153.3				cps
Short Space	1.3	1655.6	1074.2	1728.4				cps
Rho		1.7100	2.5960	1.3800				g/cc
Pe		0.0000	2.5700	1.5500				
Rib Angle	: 44.1	Rib Slope	: 0.969	Density/Spine Ratio			: 0.562	
Spine Angle	: 74.1	Spine Slope	: 3.507	Spine Intercept			: -17.5	

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: 6I
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

PRE-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	
3)	Short Space	cps		
	Long Space	cps	pu	

POST-SURVEY VERIFICATION

	Detector	Readings	Measured	Target
1)	Short Space	cps		
	Long Space	cps	pu	pu
2)	Short Space	cps		
	Long Space	cps	pu	pu
3)	Short Space	cps		
	Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: GR6
Tool Model: OPEN
Performed: Sun May 10 18:59:16 2015

Calibrator Value: 150.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 276.0 cps

Sensitivity: 0.8000 GAPI/cps