



Tucker
ENERGY SERVICES

COMPENSATED NEUTRON

PEL DENSITY LOG

Company ANDERSON ENERGY, INC Well HAY #1 Field SEDGWICK County KANSAS State USA Country 15-173-21024-00-00 API No.		File No : TUL-58234 Company : ANDERSON ENERGY, INC Well : HAY #1 Field : County : SEDGWICK State : KANSAS Country : USA API No : 15-173-21024-00-00	
Location : 2310' FNL & 2240' FEL		LSD : Sect : 14 Twp : 29S Rge : 01W	
Permanent Datum:	GL	Elevations:	Services:
Drilling Measured From:	KB	KB 1291.00	GRT
Log Measured From:	KB	DF 1289.00	CNT
Above Permanent Datum:	9.00 Ft	GL 1282.00	LDT
Date	2013-02-01		
Run Number	1		
Depth--Driller	3900.0	Ft	
Depth--Logger	3900.0	Ft	
First Reading	3852.0	Ft	
Last Reading	2000.0	Ft	
Casing--Driller	285.0	Ft	
Casing--Logger	285.0	Ft	
Bit Size	7.875	In	
Casing Size	8.625	In	
Hole Fluid Type	WBM		
Density	9.4	LBS/GAL	
Fluid Loss	9.0	CC	
PH/Viscosity	8.5	49.0 SEC	
Sample Source	MEASURED		
RMF@Measured Temp.	1.700 @ 64 F		
RMF@Measured Temp	1.450 @ 64 F		
RMF@Measured Temp.	1.960 @ 64 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	1.510 @ 107 F		
Time Circulation Stopped			
Max Recorded Temp.	107	F	
Equipment/Base	TRK 123	TULSA	
Recorded By	Z. HICKMAN		
Witnessed By	K. LEBLANC		

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings		
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)
7.875	3900.00	8.625	24.00	285.00

Run Number	1	
Date	2013-02-01	
Date/Time On Bottom	2013-02-01 05:30	
Depth to Fluid	0.0 Ft	
Salinity	0.000 PPM	
RMF@BHT	1.280 @ 107 F	
RMC@BHT	1.730 @ 107 F	

Run Number 1

Comments

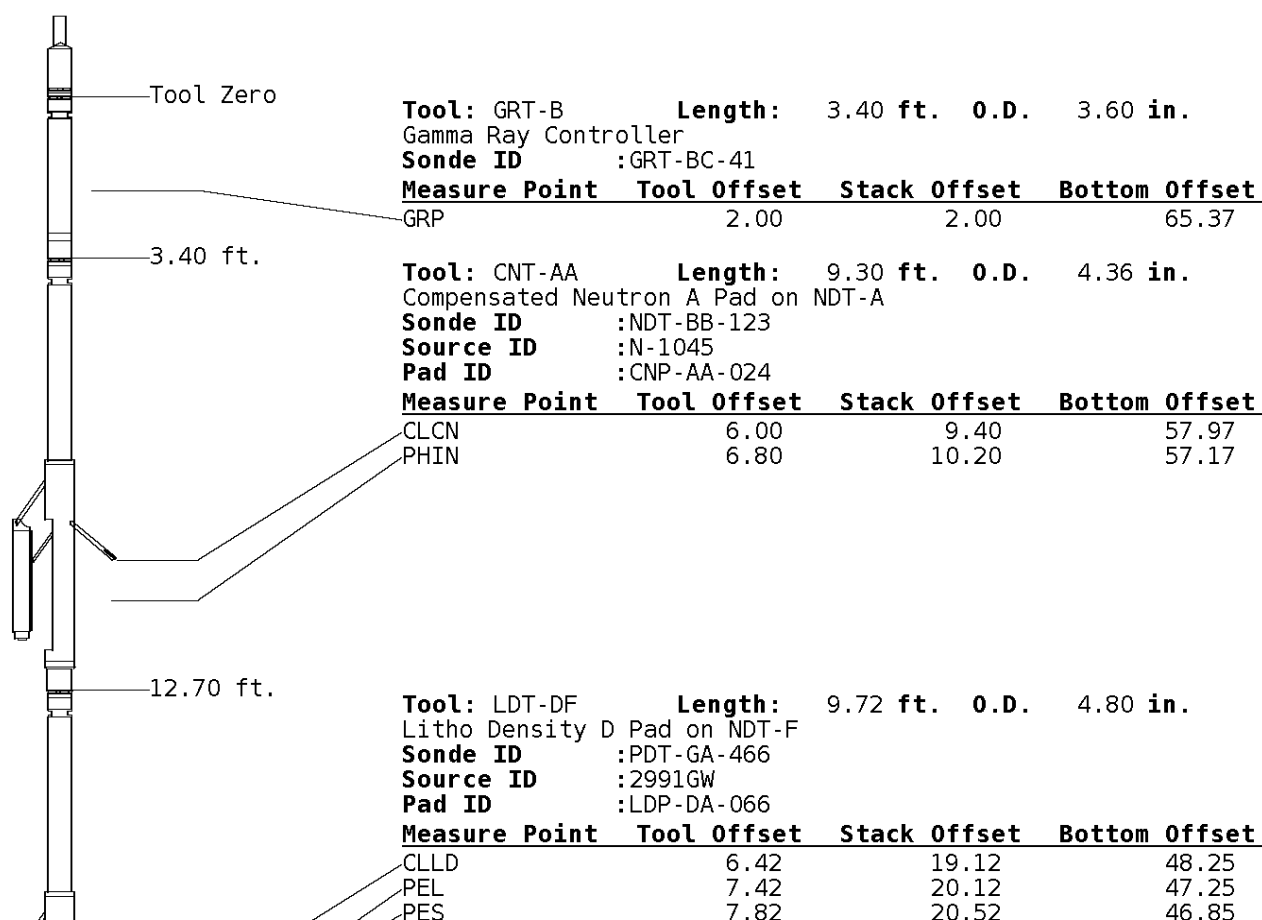
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT, CST, AND PIT RUN IN COMBINATION.
 CALIPERS ORIENTED ON X-Y AXIS.
 2.71 G/CC USED TO CALCULATED POROSITY.
 ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING.
 DETAIL PRESENTED FROM TD TO 2000'
 PHIN IS CALIPER CORRECTED
 HIRES PRESENTED FROM TD TO 2700'

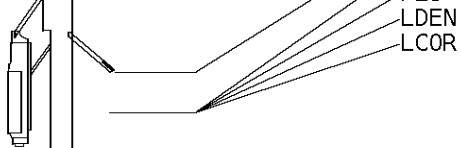
GRT: GRP, GRX.
 CNT: PHIN, CLCNIN, PHXN.
 LDT: PORL, PXRL, LCORN, LCORNX, PECLN, PECLNX, LDENN, LDENN, PORLLS, CLLDIN.
 MLT: NOR_RF, INV_RF, MSCLPIN.
 CST: PORS, ITT, CDTF, TT1, TT3.
 PIT: ILD, ILM, SPU, SFLAEC, CIRD.

OPERATORS:
 M. RUBY
 D. HOPPER

Tool String Schematic

Total Tool Length - 67.37 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1171.00 lbs.



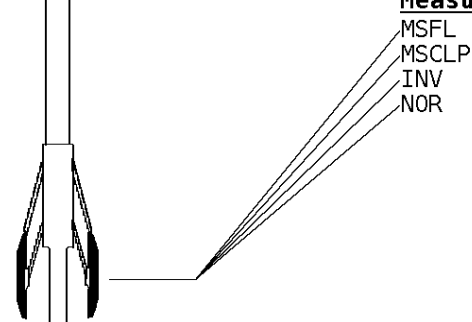


LDEN	7.62	20.32	47.05
LCOR	7.62	20.32	47.05

22.42 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
Micro Spherically Focused (IC)
Sonde ID :MST-DA-36

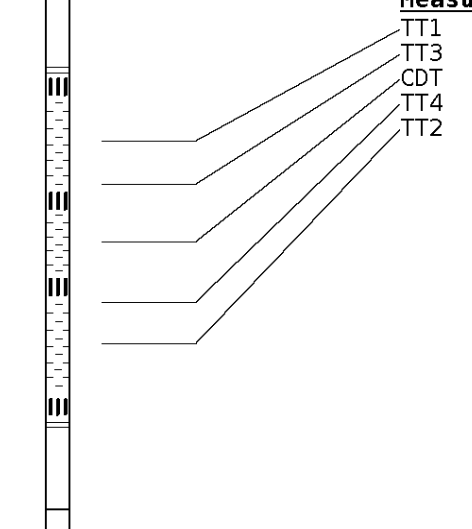
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	37.35
MSCLP	7.60	30.02	37.35
INV	7.60	30.02	37.35
NOR	7.60	30.02	37.35



32.08 ft.

Tool: CST-AD **Length:** 13.80 ft. **O.D.** 3.60 in.
Open Hole Sonic
Sonde ID :CST-AB-25

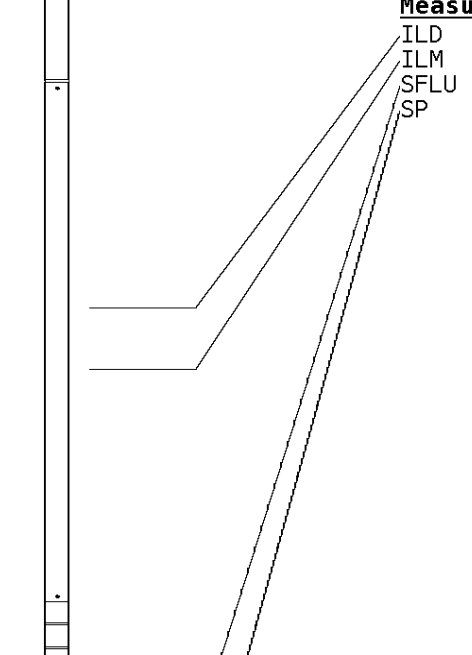
Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	36.88	30.49
TT3	5.80	37.88	29.49
CDT	7.30	39.38	27.99
TT4	8.80	40.88	26.49
TT2	9.80	41.88	25.49



45.88 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
Phased Dual Induction w/ RM & D
Sonde ID :PIT-AB-005

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	54.80	12.56
ILM	10.10	55.98	11.39
SFLU	17.49	63.37	4.00
SP	20.60	66.48	0.88



LWT 67.37 ft.

Well File: AND HAY 1 FEB 1 QUINT

Segment: V1.D1.S6 MAIN

Reference: 0

Scale: 1:240

Acquired: 2013-02/01 05:49 3.2.0-11401

Processed: 2013-02/01 07:48 3.2.0-11401

BIT SIZE
INCHES (IN)

6 16

NEUTRON (Y) CALIPER
INCHES (IN)

16 26
6 16

DENSITY (X) CALIPER
INCHES (IN)

16 26
6 16

Volume
Quartz

PE CROSS-SECTION
BARNs/ELECTRON

DENSITY CORRECTION
G/CC

0 10 -0.25 0.25

TENSION
LBS

10000 0

Volume
Calcite

DENSITY POROSITY (2.71g/cc)
PERCENT

70 30
30 -10
-10 -50

GAMMA RAY
API UNITS

150 300
0 150

Volume
Dolo/Shale

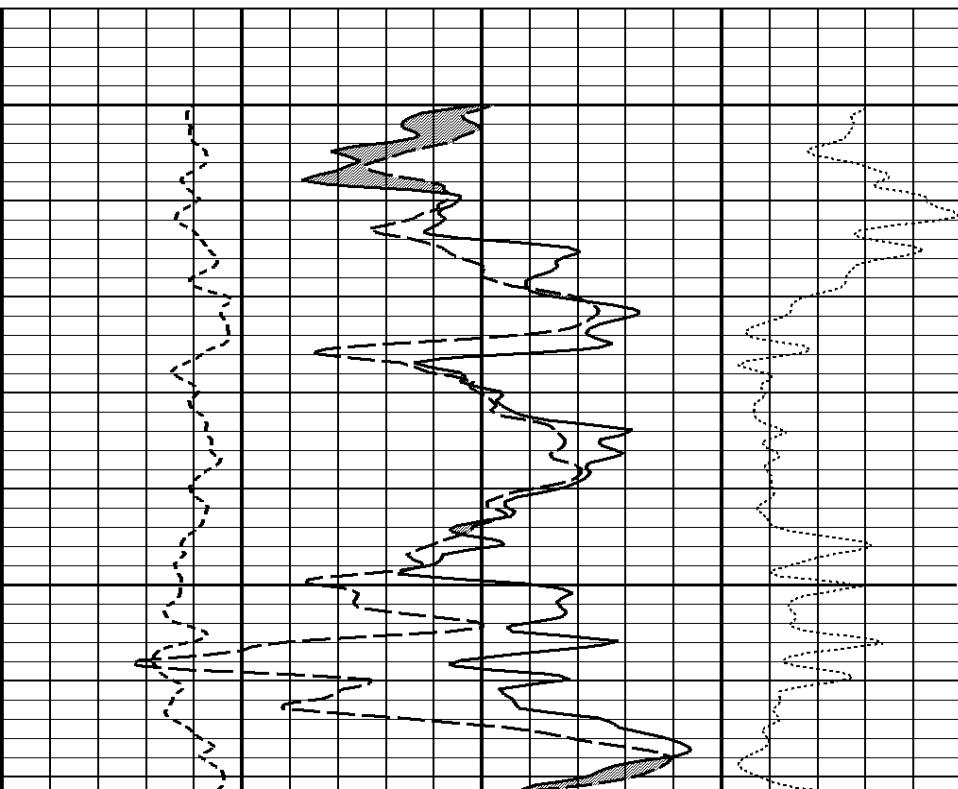
NEUTRON POROSITY (LIMESTONE)
PERCENT

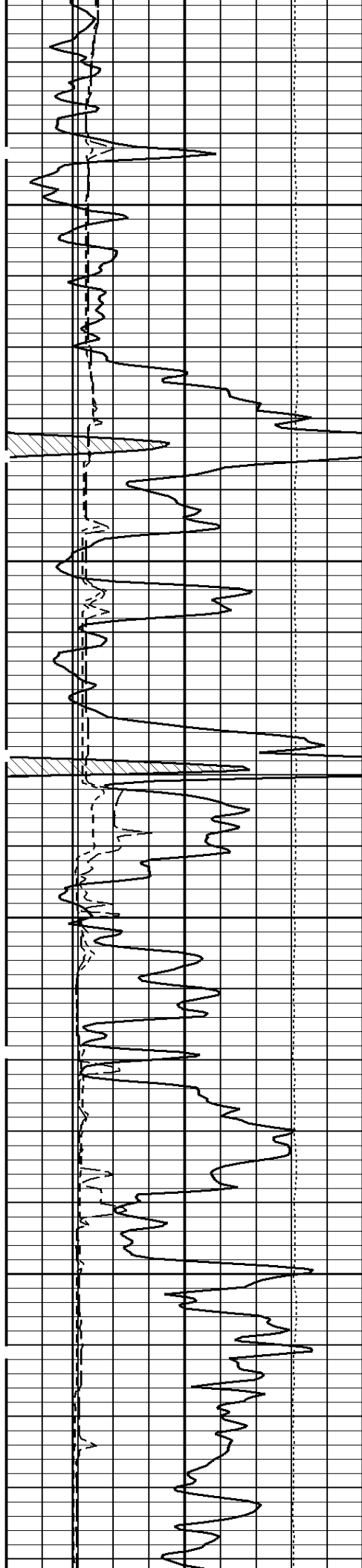
70 30
30 -10
-10 -50

1:240 MAIN SECTION

File #1.1.6

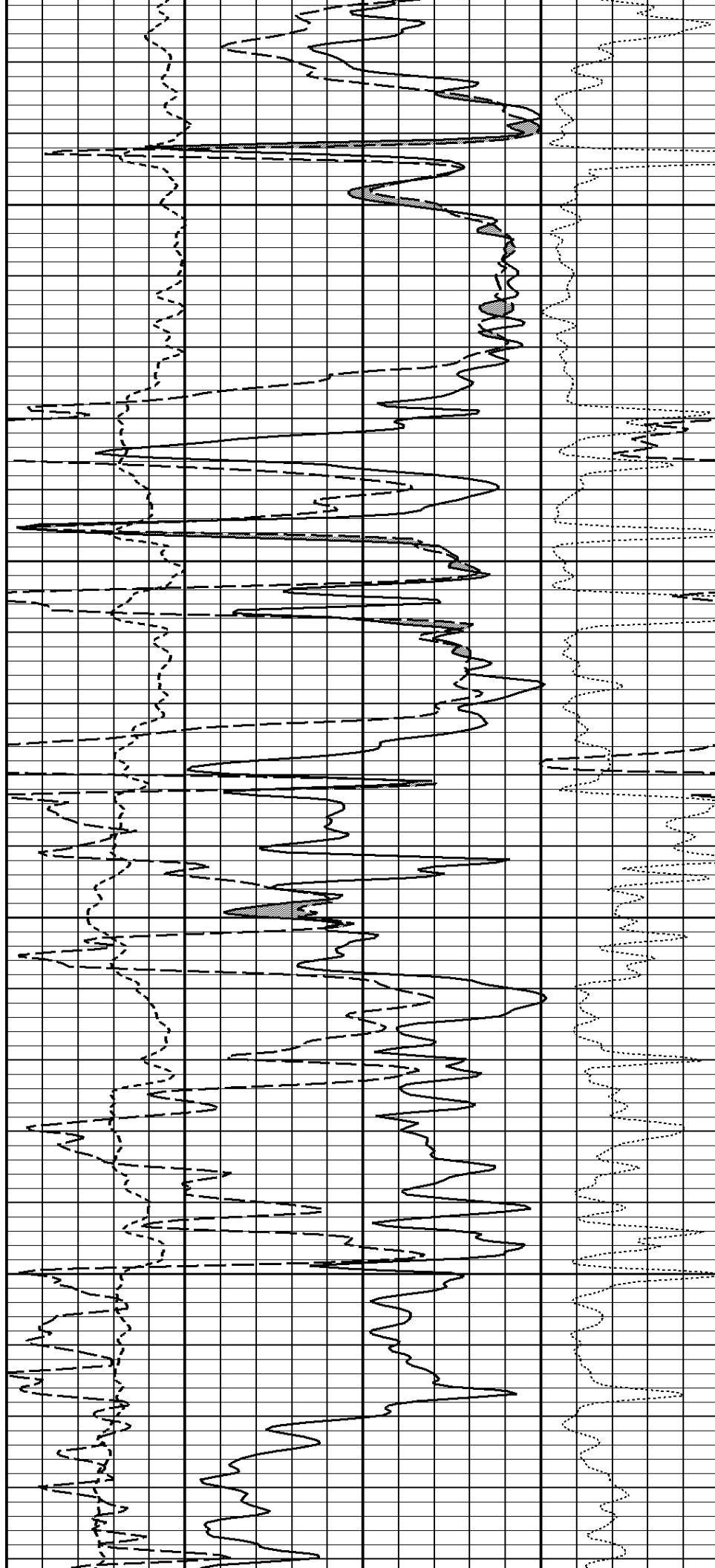
2000

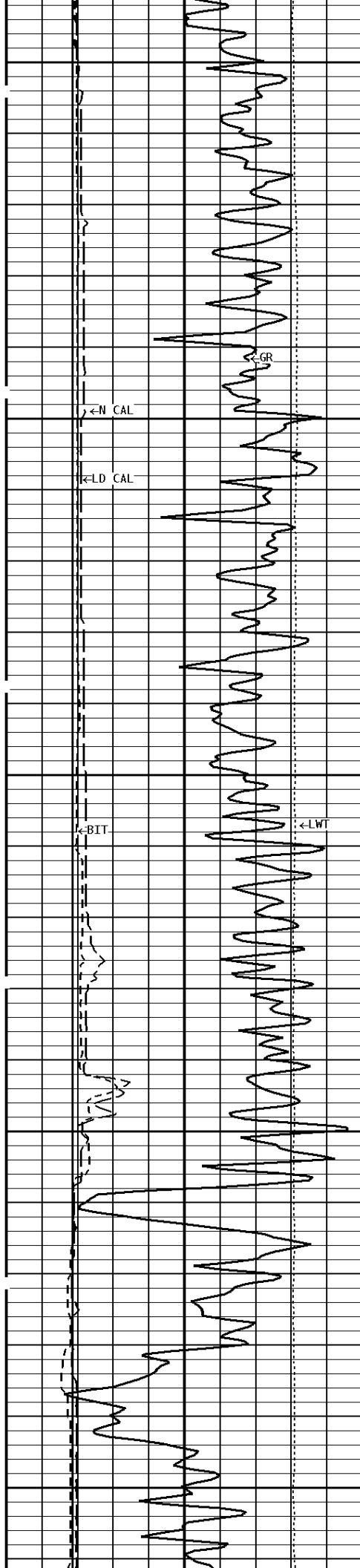




2100

2200

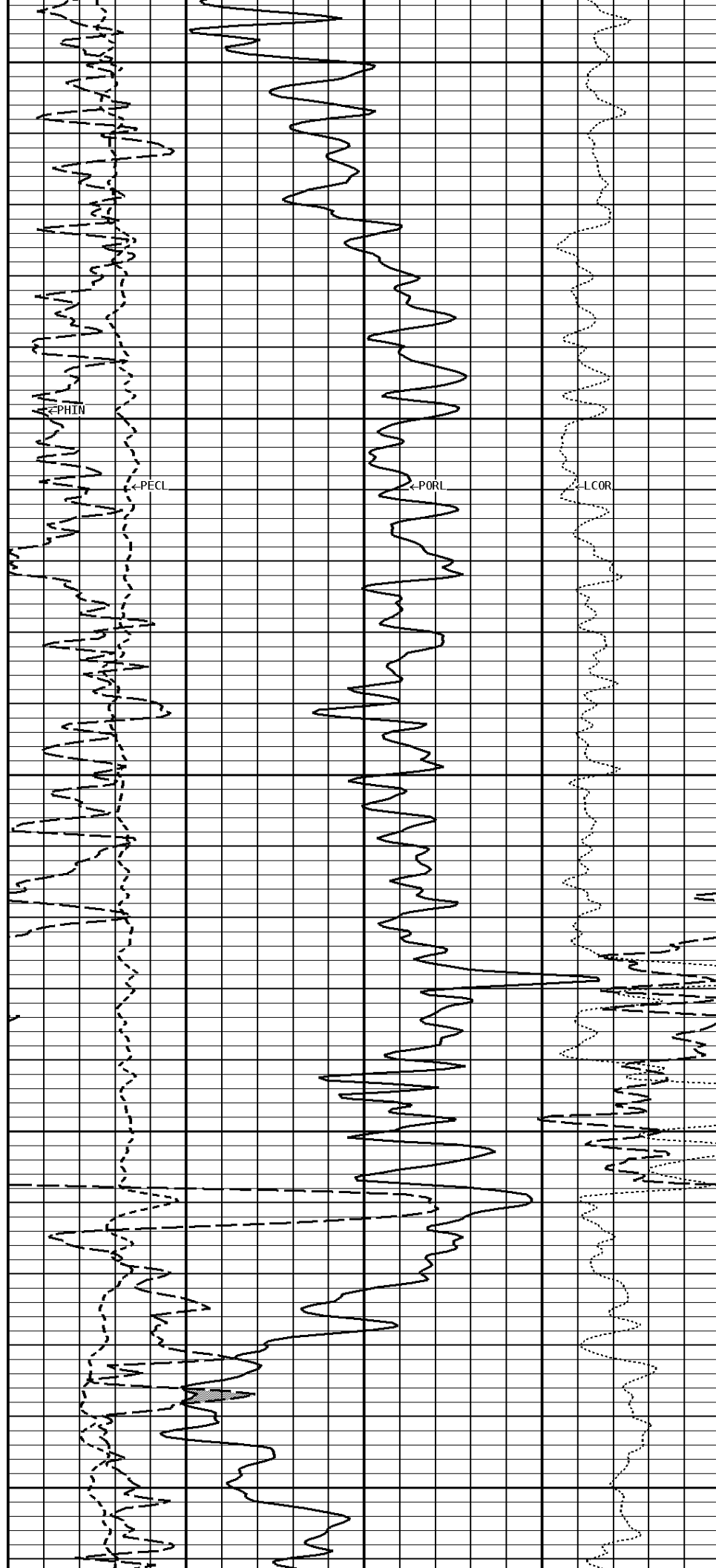


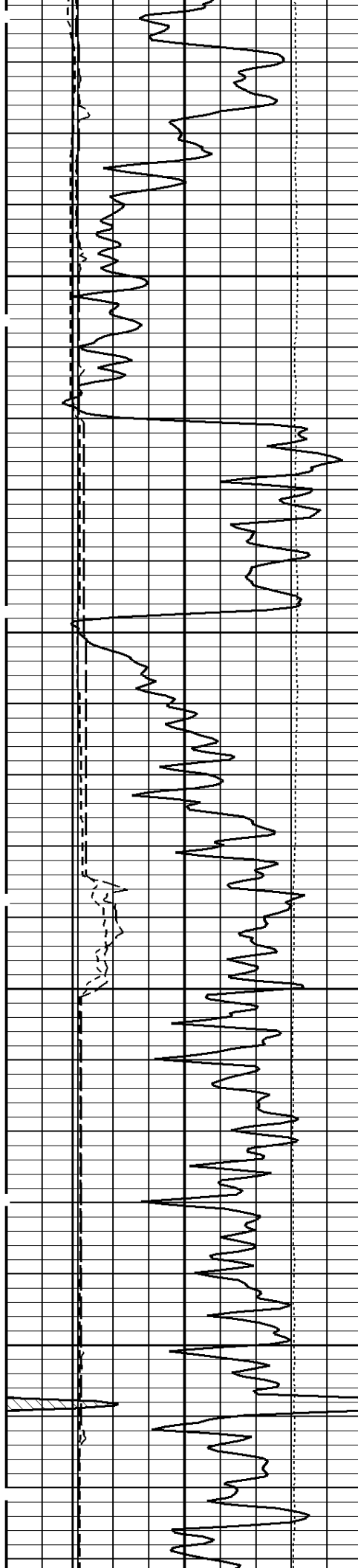


2300

2400

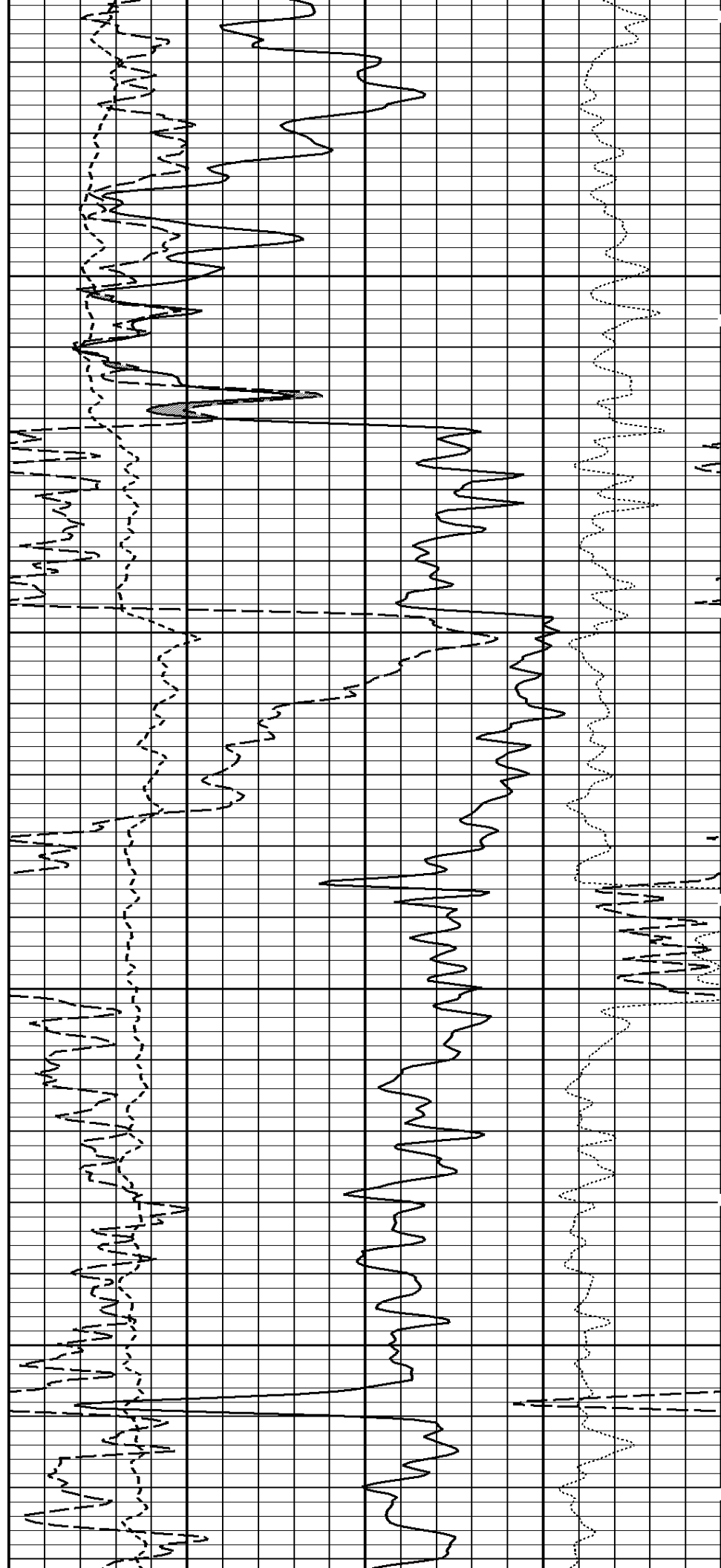
2500

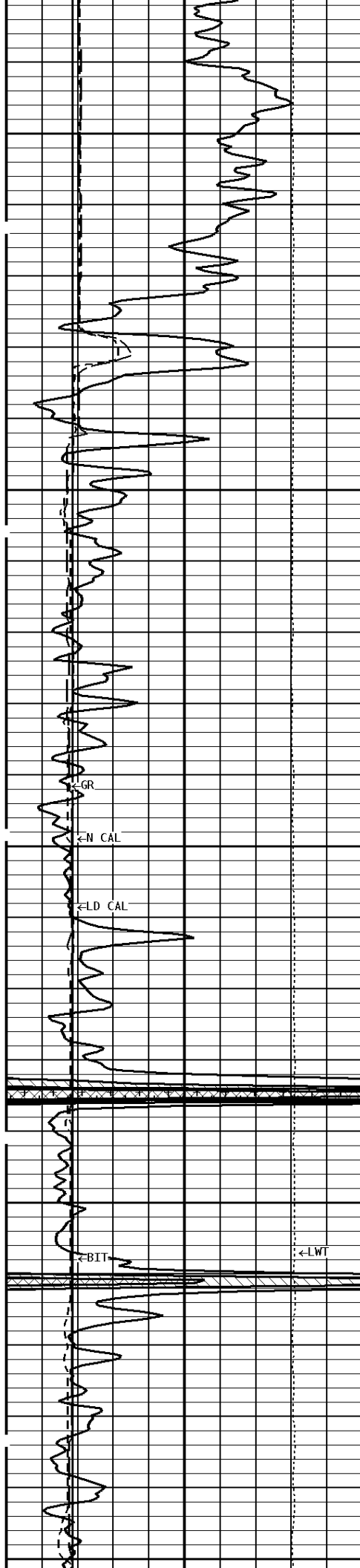




2600

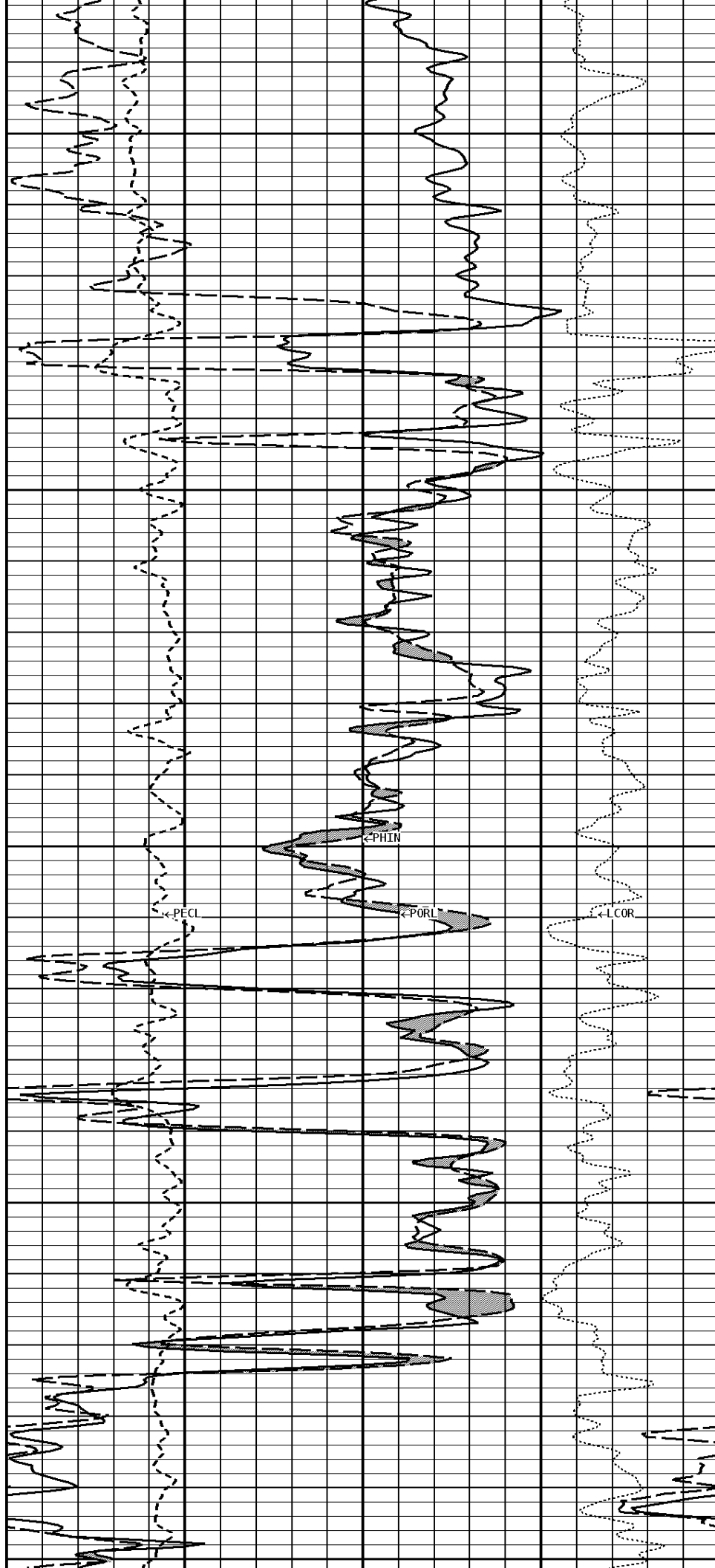
2700

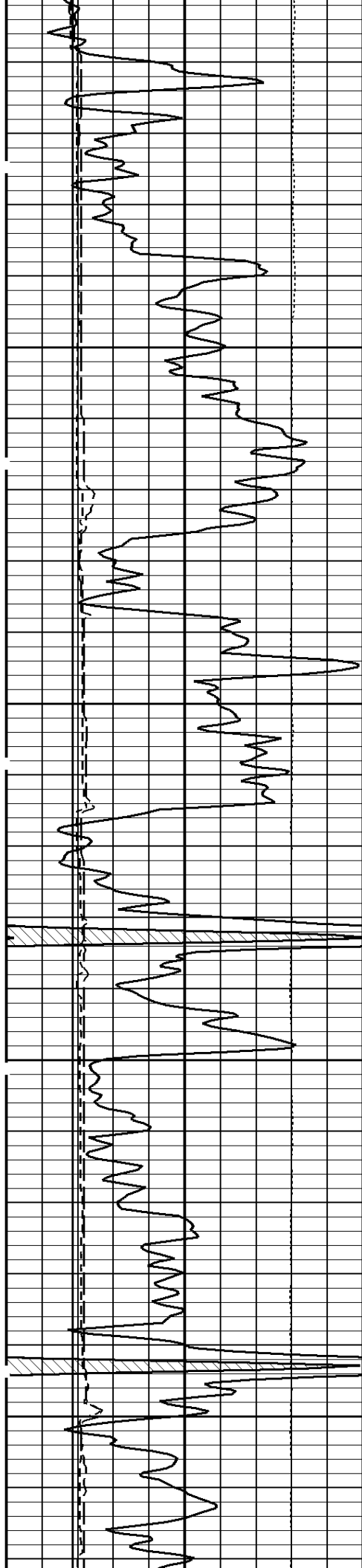




2800

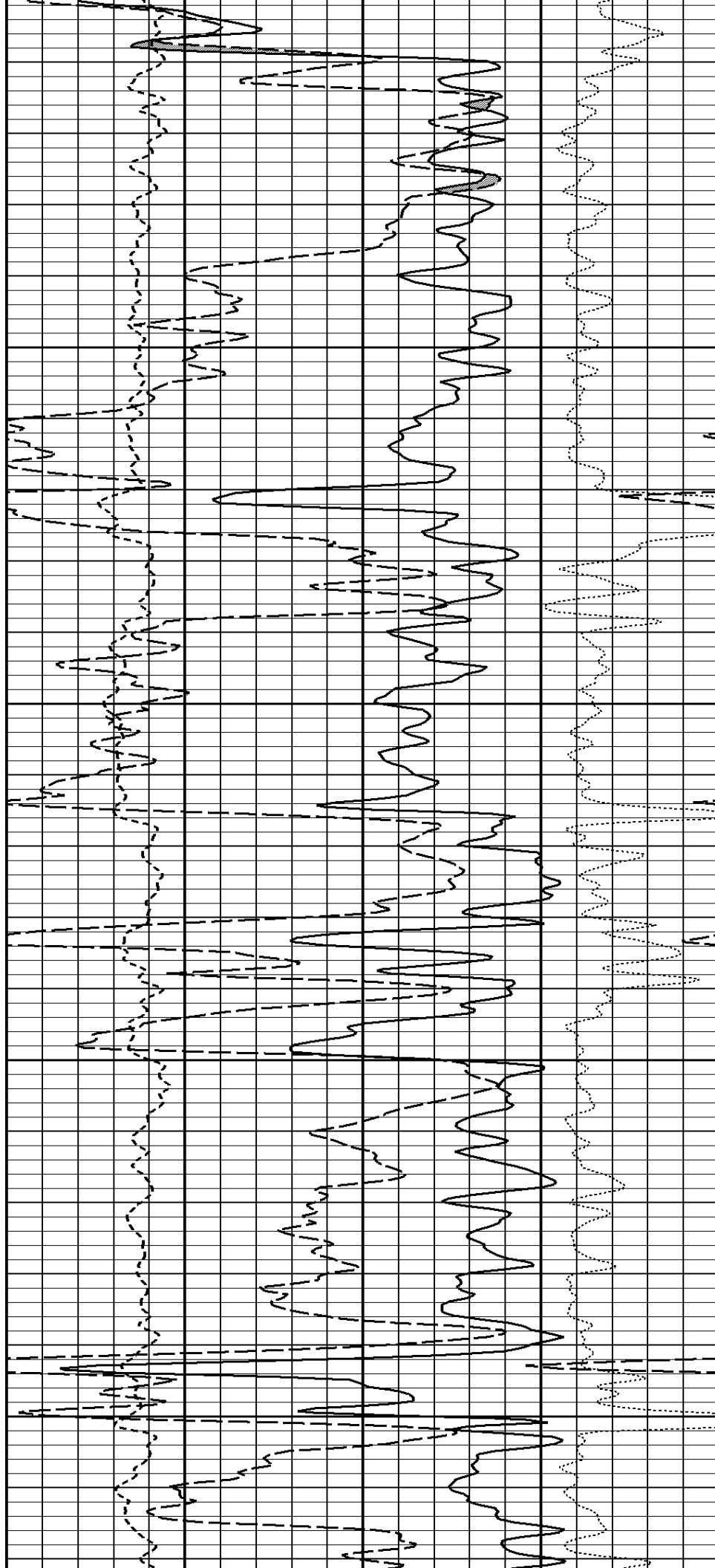
2900

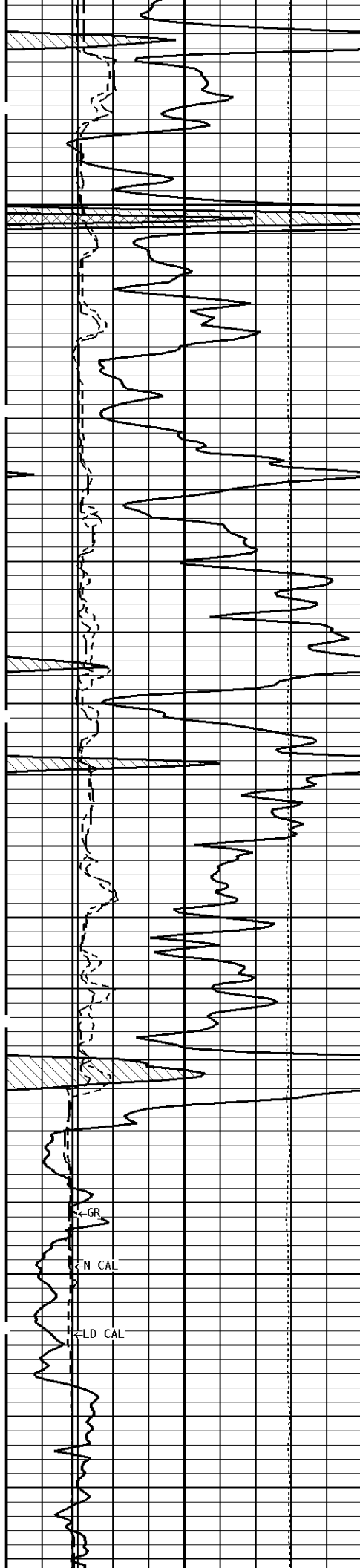




3000

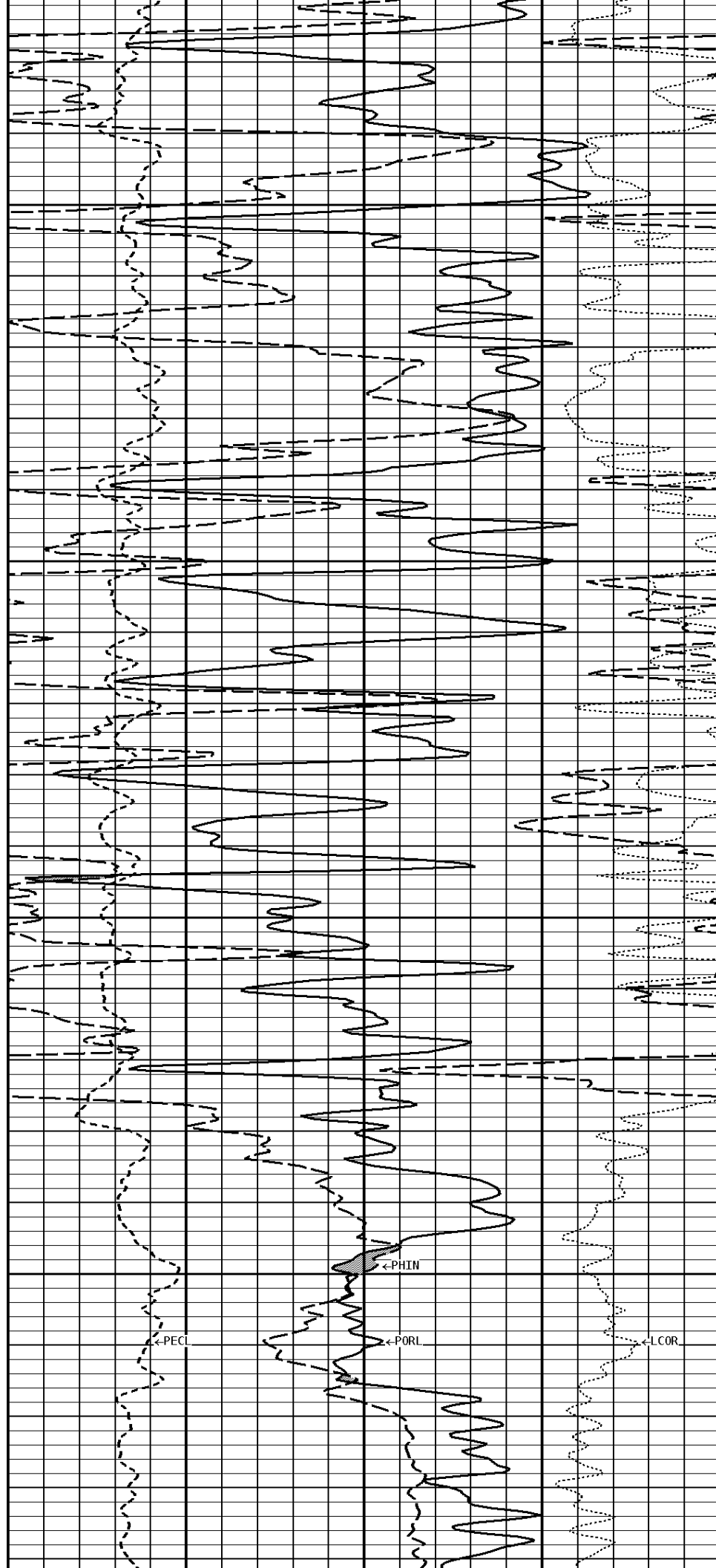
3100

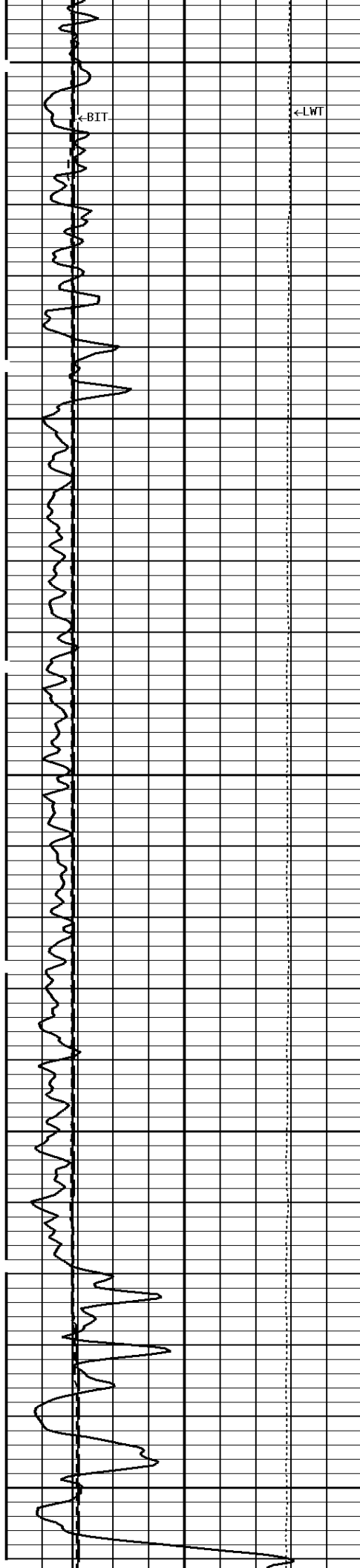




3200

3300

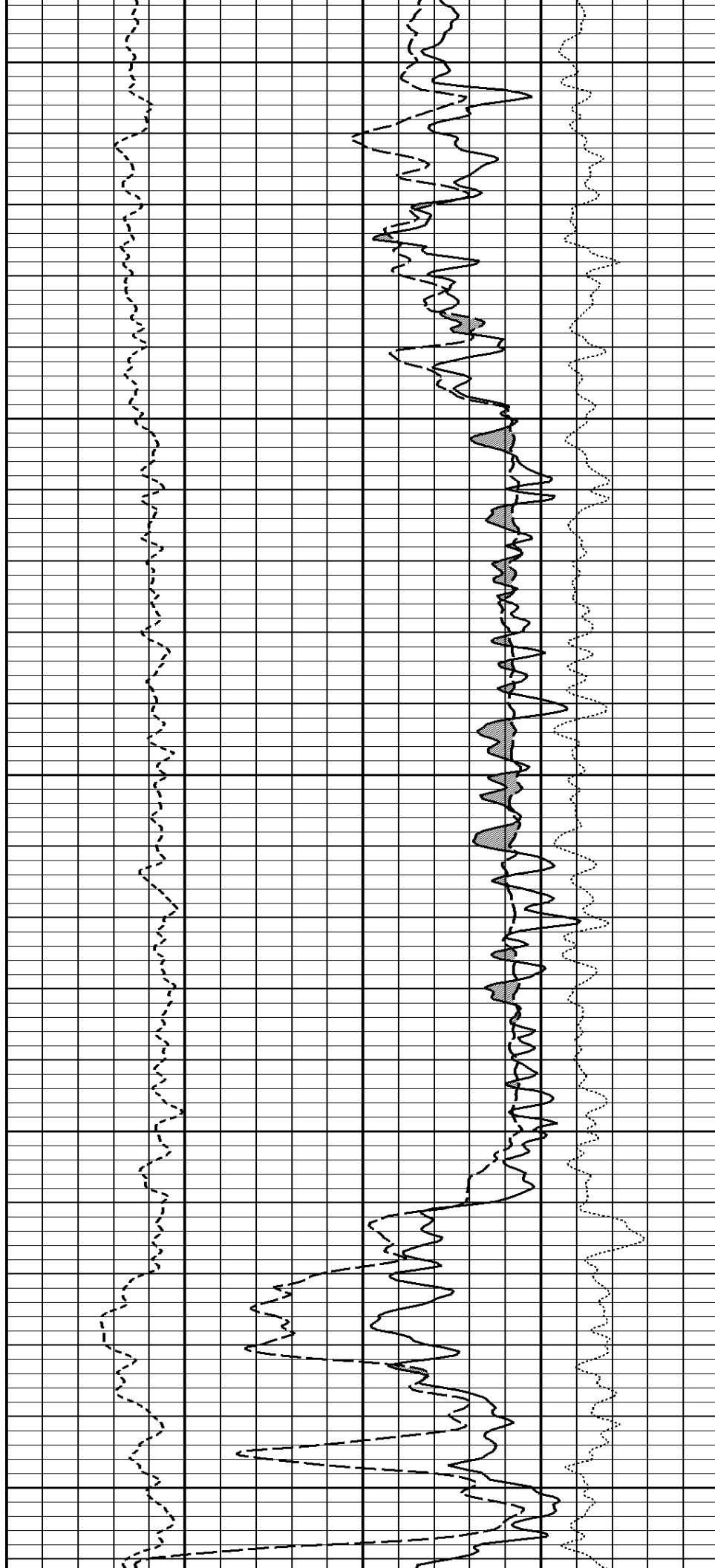


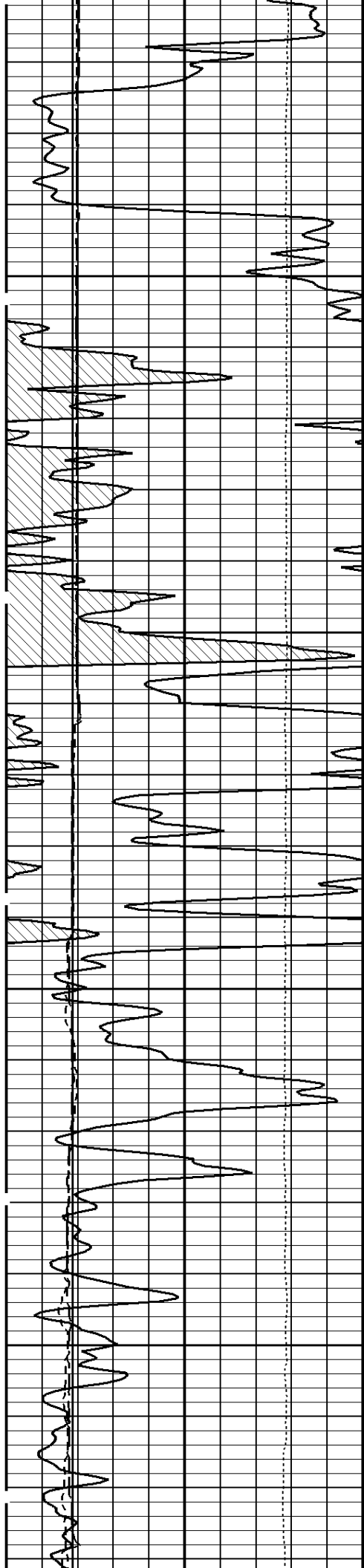


3400

3500

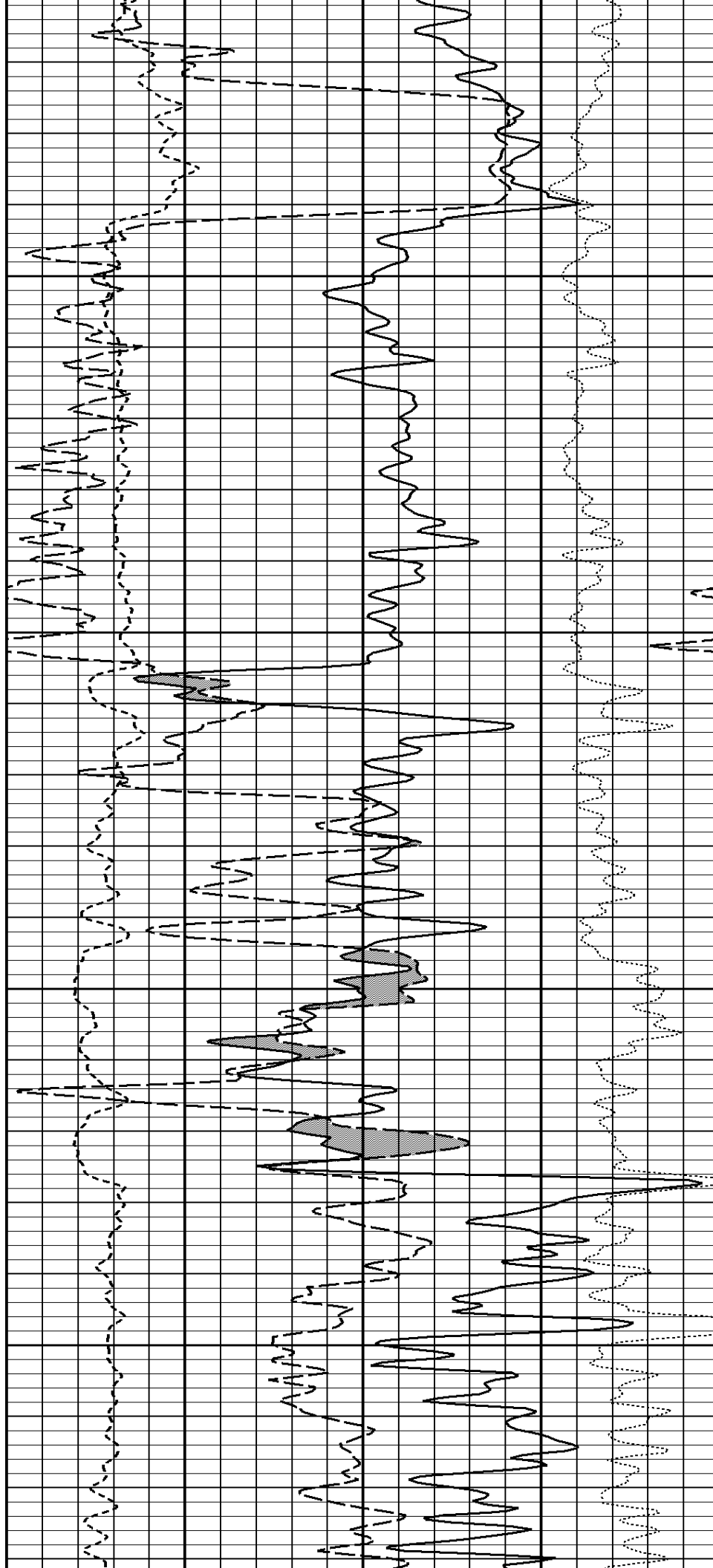
3600

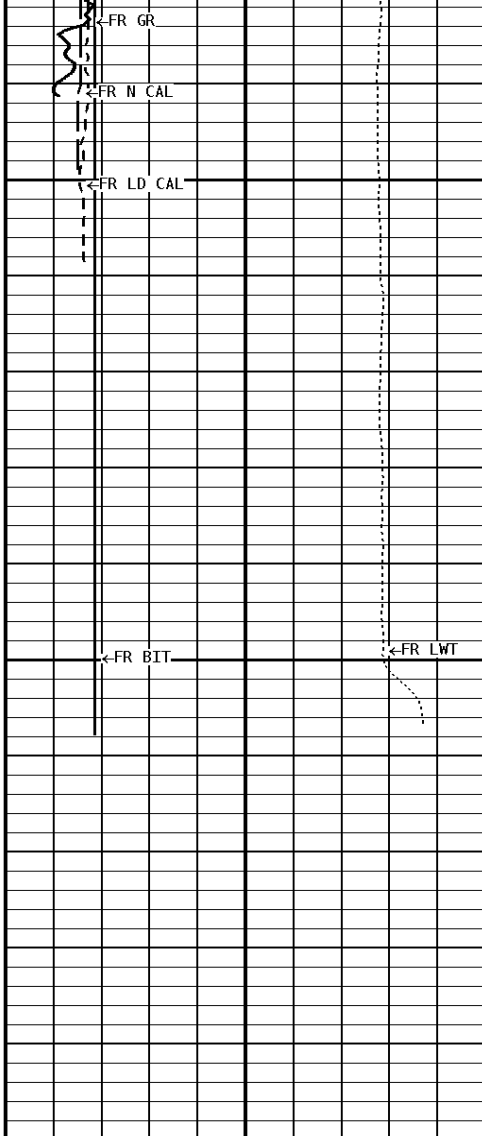




3700

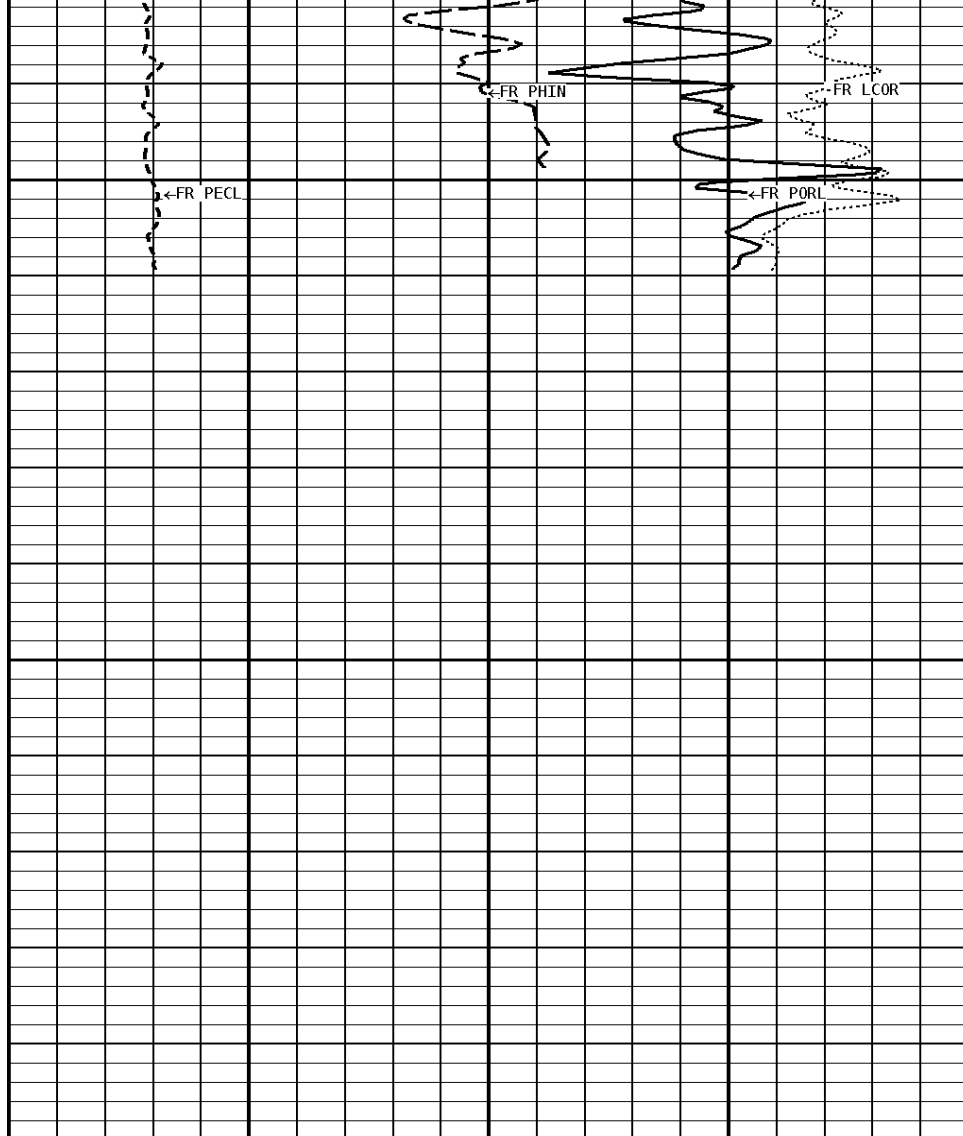
3800





File #1.1.6

3900



1:240 MAIN SECTION

GAMMA RAY API UNITS 150 0 300 150		Volume Dolo/Shale 70 30 -10	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10 -50	
TENSION LBS 10000 0		Volume Calcite 70 30 -10	DENSITY POROSITY (2.71g/cc) PERCENT 30 -10 -50	
DENSITY (X) CALIPER INCHES (IN) 16 6 26 16		Volume Quartz 0 10	PE CROSS-SECTION BARNS/ELECTRON -0.25 0.25	DENSITY CORRECTION G/CC
NEUTRON (Y) CALIPER INCHES (IN) 16 6 26 16				
BIT SIZE INCHES (IN) 6 16				

* Borehole Zone Factors *

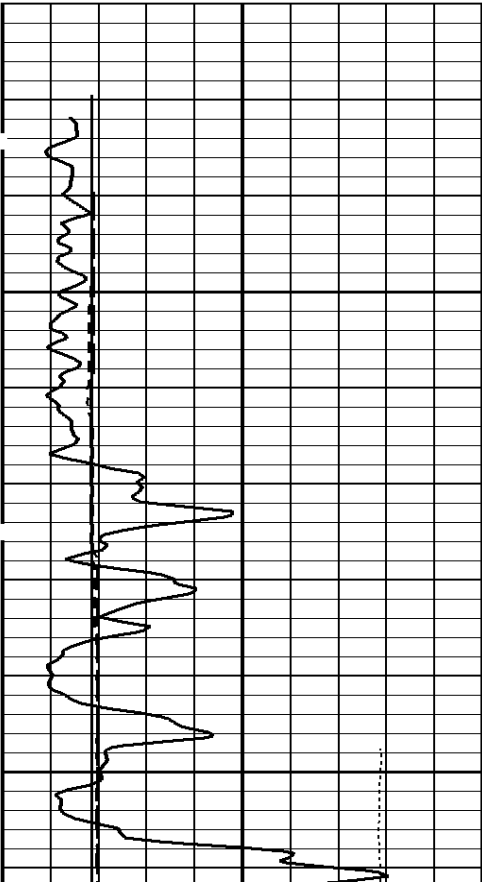
Zone 1 00000.0 to 0.0 Feet

Zone 1 99999.0 to 0.0 Feet			
Matrix Density		2.71	g/cc
Fluid Density		1.00	g/cc
Formation Matrix		Limestone	
Drill Bit Size		7.875	in
Casing Diameter		5.500	in
Casing Thickness		0.250	in
Casing Correction (PHI N)		Disable	

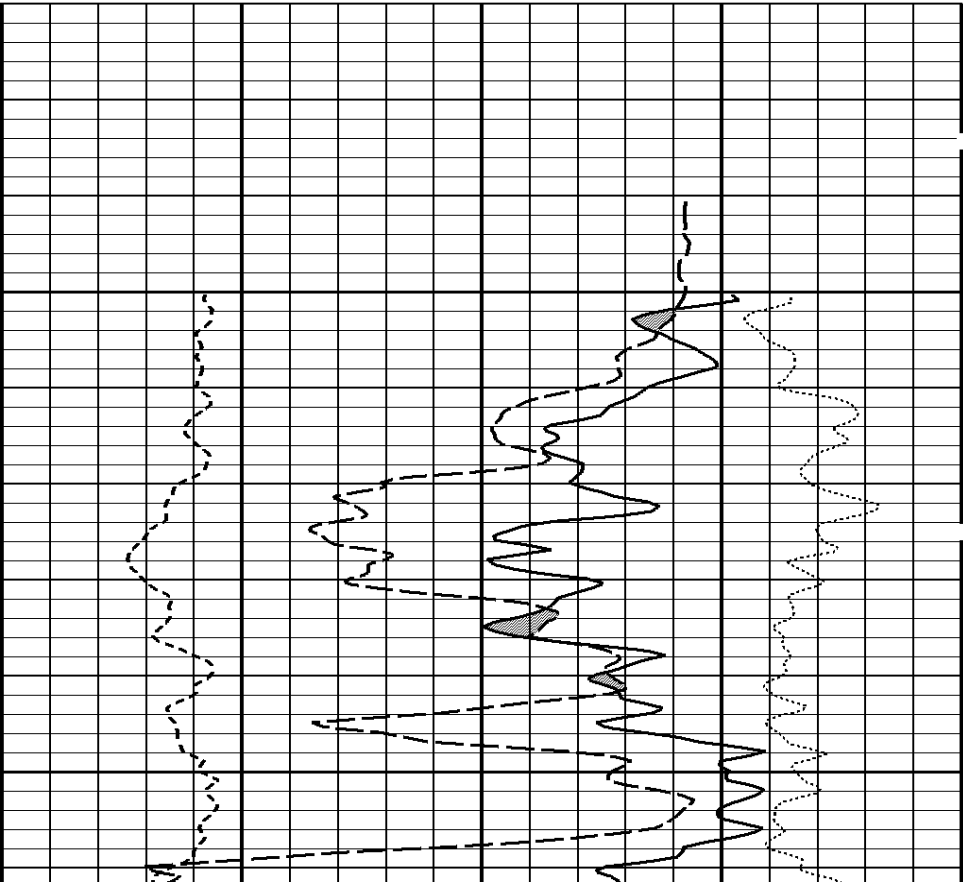
Well File: AND HAY 1 FEB 1 QUINT	Scale: 1:240
Segment: V1.D1.S5 REPEAT	Acquired: 2013-02/01 05:30 3.2.0-11401
Reference: 0	Processed: 2013-02/01 07:47 3.2.0-11401

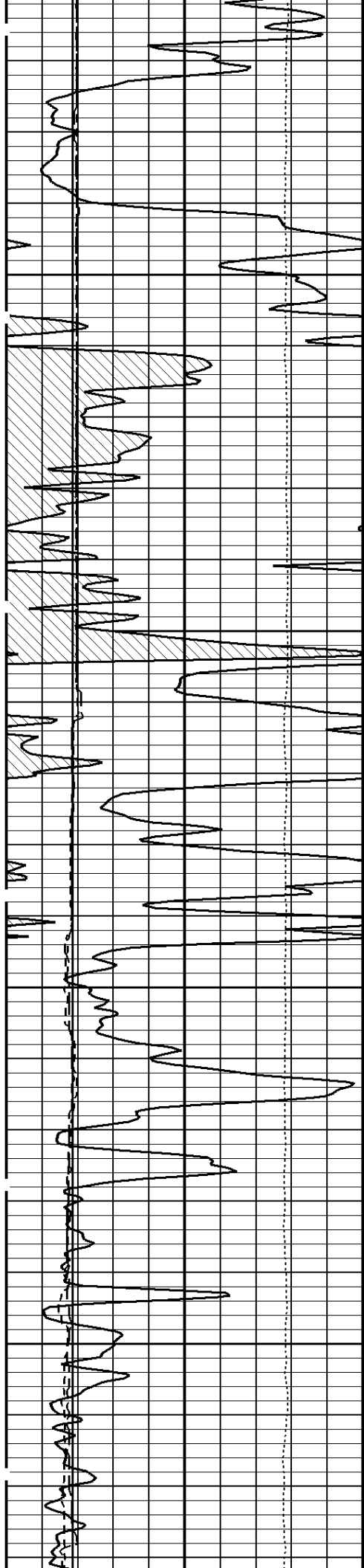
BIT SIZE INCHES (IN)					
6	16				
NEUTRON (Y) CALIPER INCHES (IN)					
16	26				
6	16				
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC	
16	26				
6	16		0	10	-0.25 0.25
TENSION LBS		Volume Calcite	DENSITY POROSITY (2.71g/cc) PERCENT		
10000	0		70	30	
			30	-10	
			-10	-50	
GAMMA RAY API UNITS		Volume Dolo/Shale	NEUTRON POROSITY (LIMESTONE) PERCENT		
150	300		70	30	
0	150		30	-10	
			-10	-50	

1:240 REPEAT SECTION



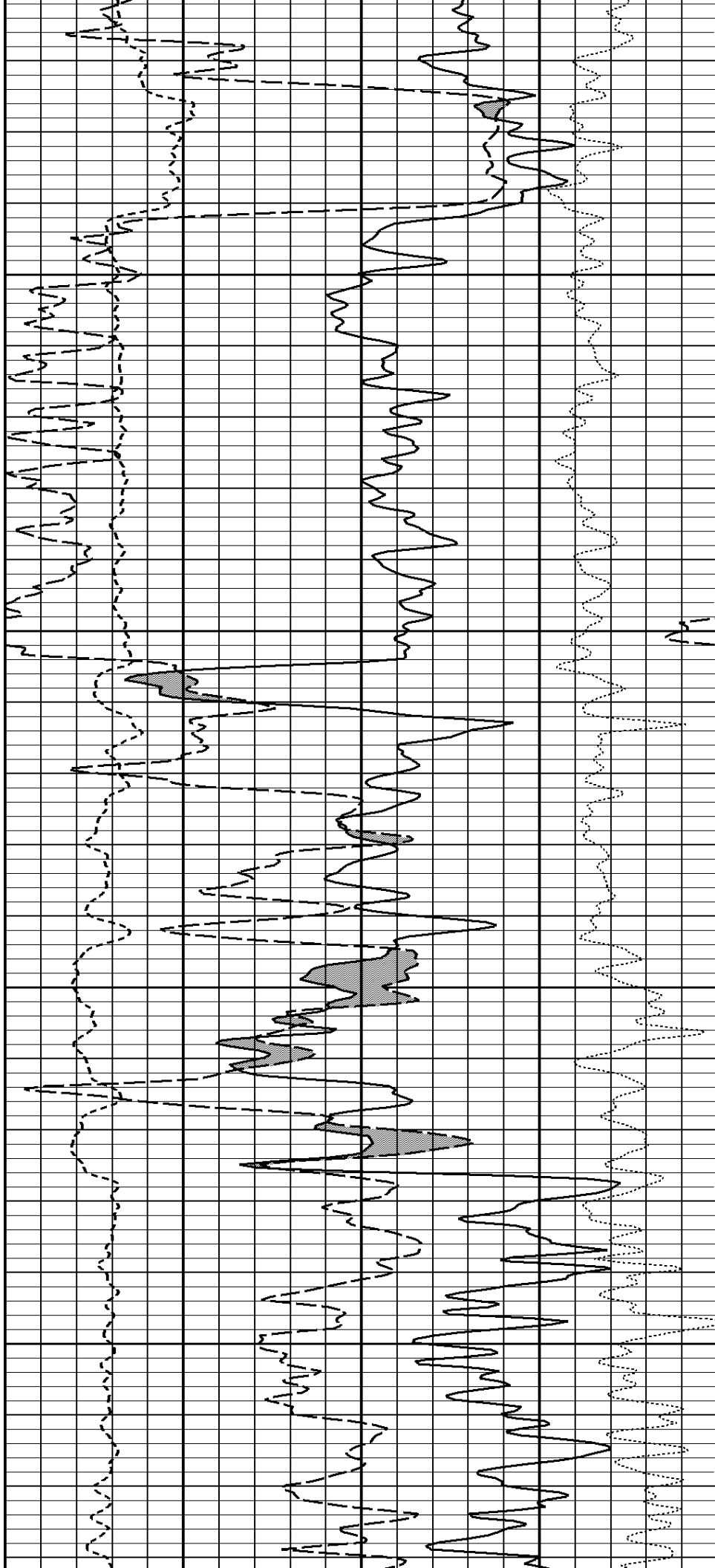
3600

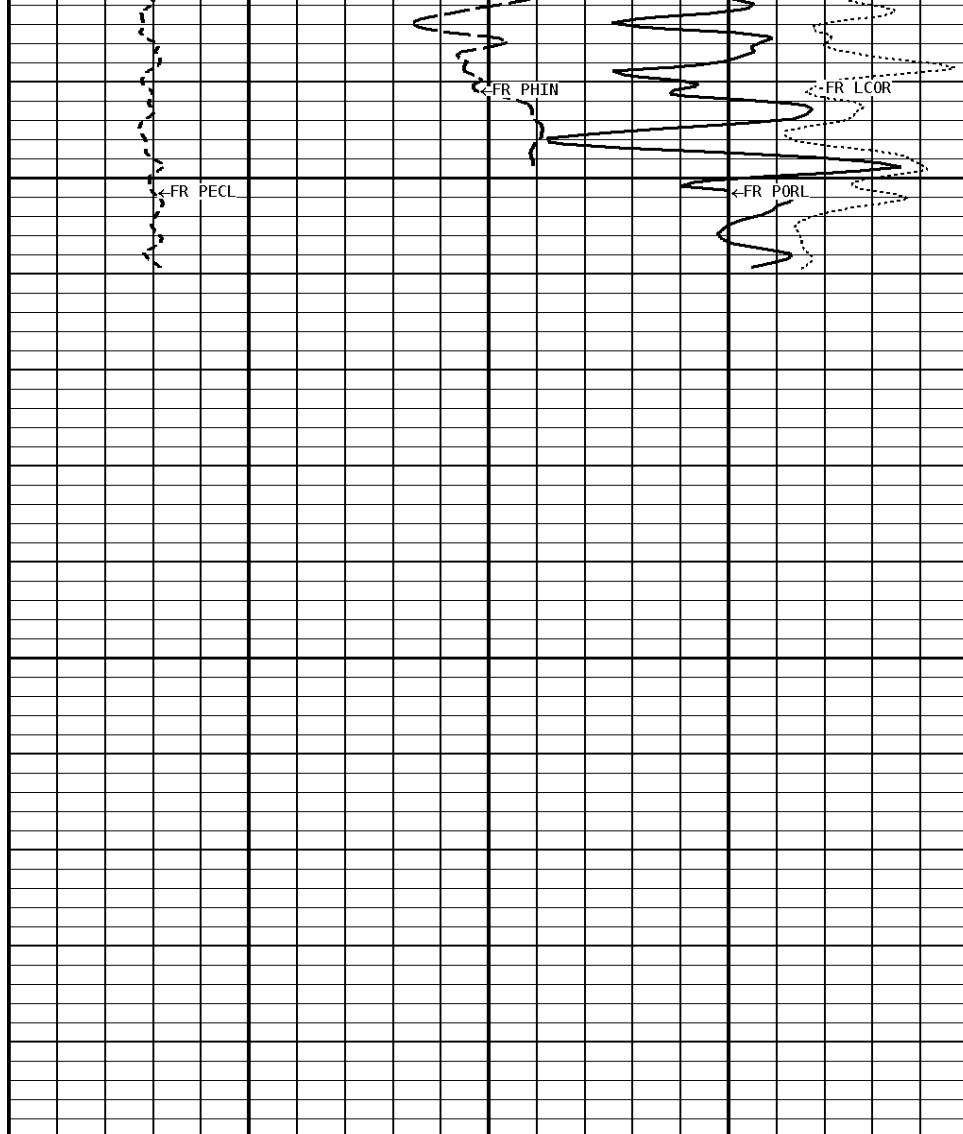
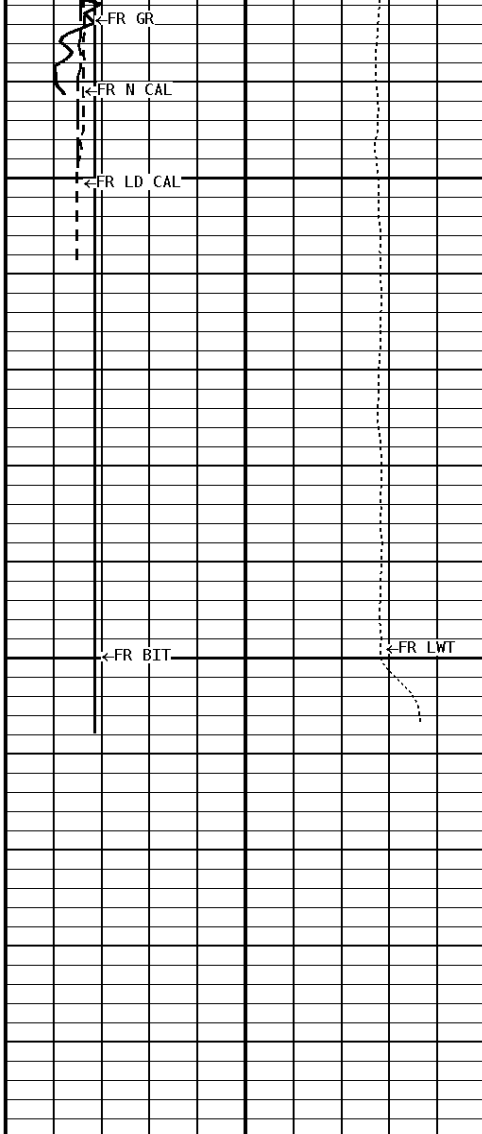




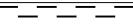
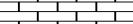
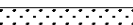
3700

3800





1:240 REPEAT SECTION

GAMMA RAY API UNITS		Volume Dolo/Shale	NEUTRON POROSITY (LIMESTONE) PERCENT	
150 0	 300 150		70 30	30 -10
			-10	-50
TENSION LBS		Volume Calcite	DENSITY POROSITY (2.71g/cc) PERCENT	
10000	0		70 30	30 -10
			-10	-50
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC
16 6	26 16		010	-0.250.25
NEUTRON (Y) CALIPER INCHES (IN)				
16 6	26 16			
BIT SIZE INCHES (IN)				
6	16			

* Borehole Zone Factors *

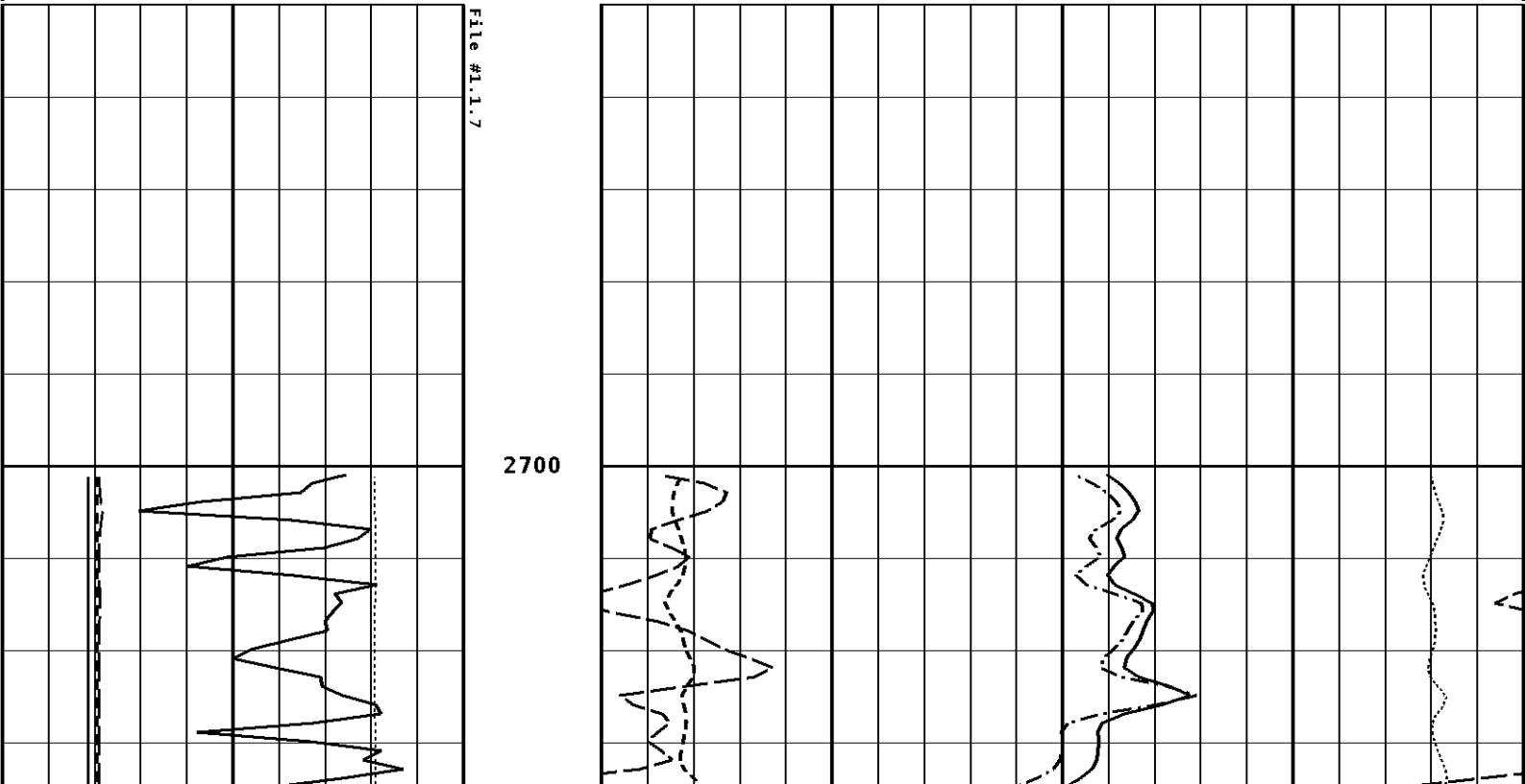
Zone 1 00000.0 to 0.0 Feet

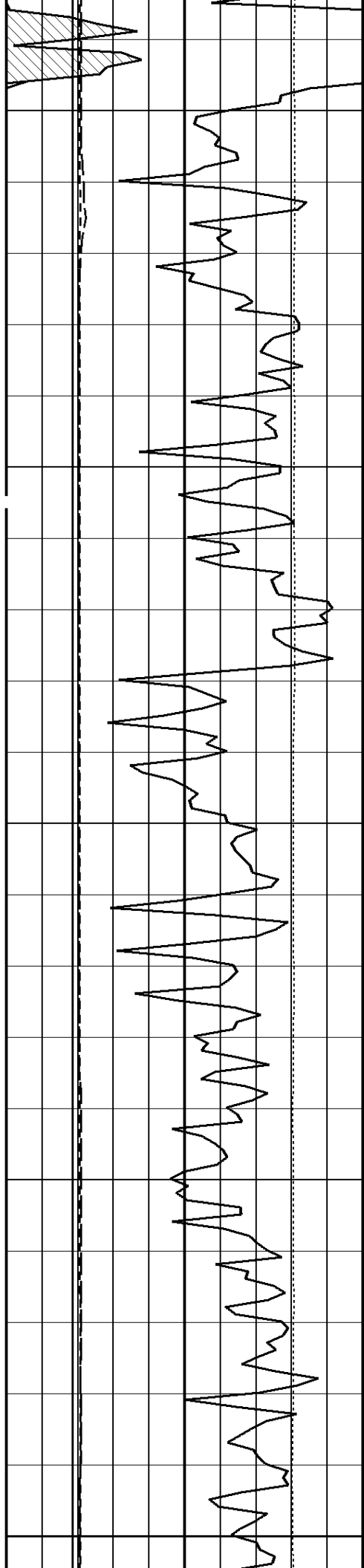
Zone 1 99999.0 to 0.0 Feet			
Matrix Density	_____	2.71	g/cc
Fluid Density	_____	1.00	g/cc
Formation Matrix	_____	Limestone	
Drill Bit Size	_____	7.875	in
Casing Diameter	_____	5.500	in
Casing Thickness	_____	0.250	in
Casing Correction (PHI N)	_____	Disable	

Well File: AND HAY 1 FEB 1 QUINT	Scale: 1:48
Segment: V1.D1.S7 HIRES	Acquired: 2013-02/01 05:49 3.2.0-11401
Reference: 0	Processed: 2013-02/01 07:46 3.2.0-11401

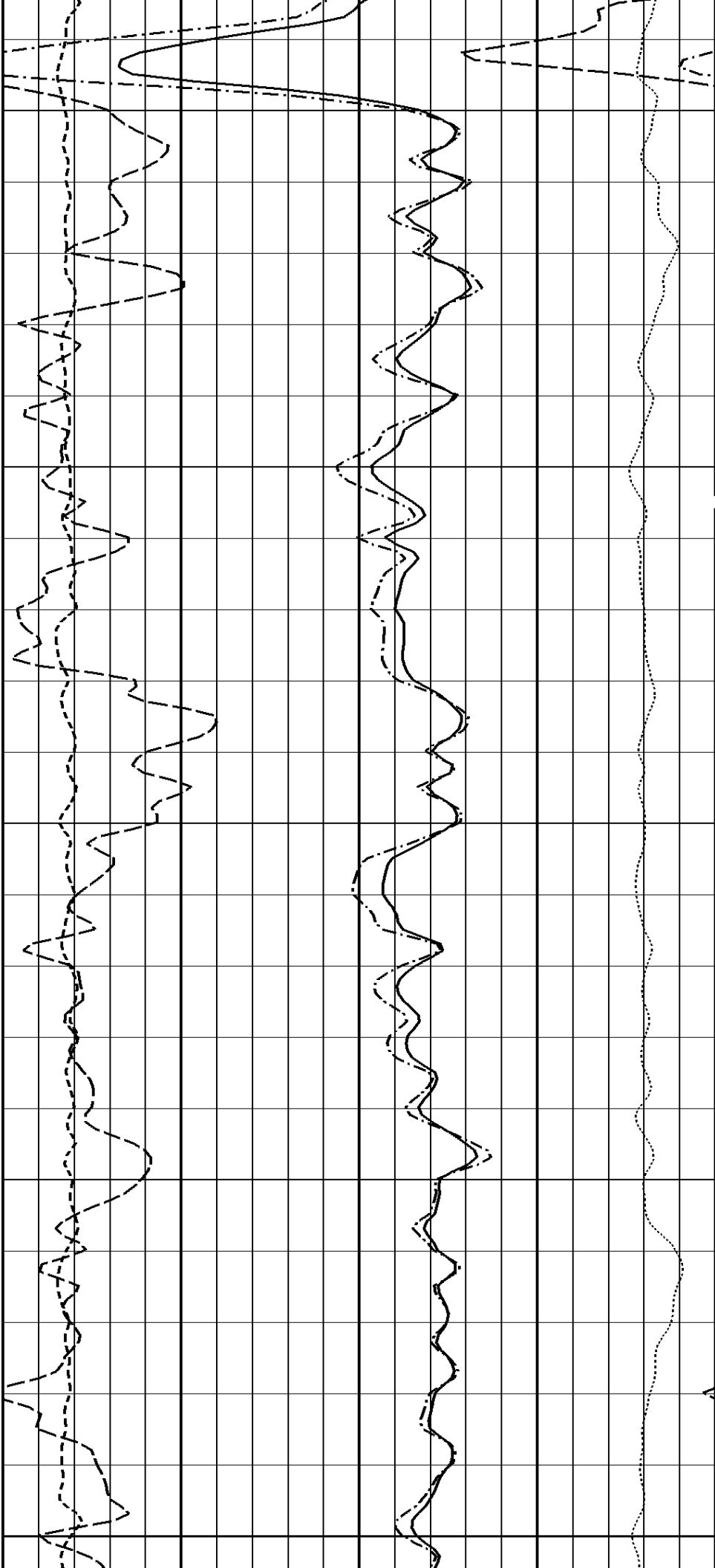
BIT SIZE INCHES (IN)			
6	16		
NEUTRON (Y) CALIPER INCHES (IN)		PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC
16	26	0	20
6	16	-0.75	0.25
DENSITY (X) CALIPER INCHES (IN)		COMPENSATED BULK DENSITY G/CC	
16	26	3.0	4.0
6	16	2.0	3.0
TENSION LBS		1.0	2.0
10000	0	NEUTRON POROSITY (LIMESTONE) PERCENT	
GAMMA RAY API UNITS		70	30
150	300	30	-10
0	150	-10	-50
		DENSITY POROSITY (2.71g/cc) PERCENT	
		70	30
		30	-10
		-10	-50

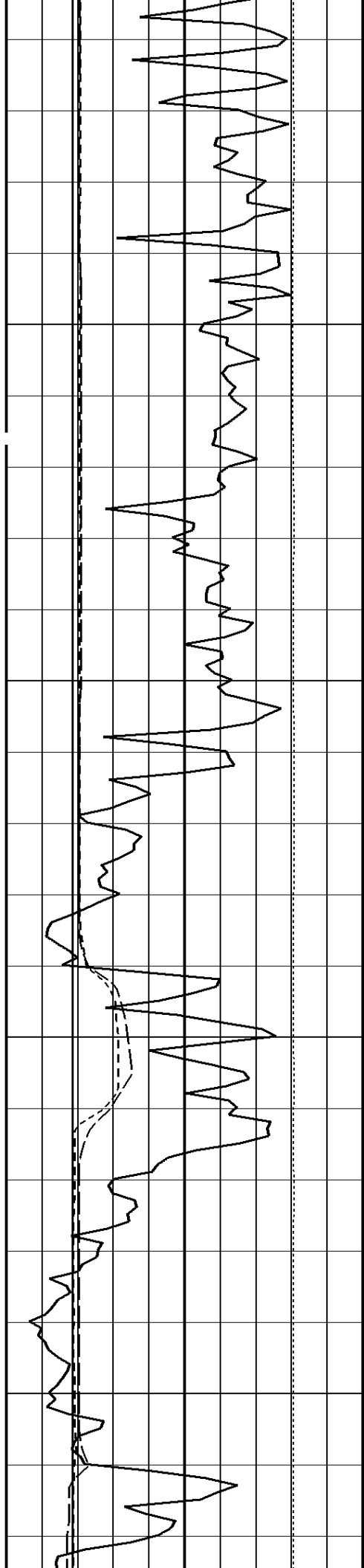
1:48 HIGH RESOLUTION



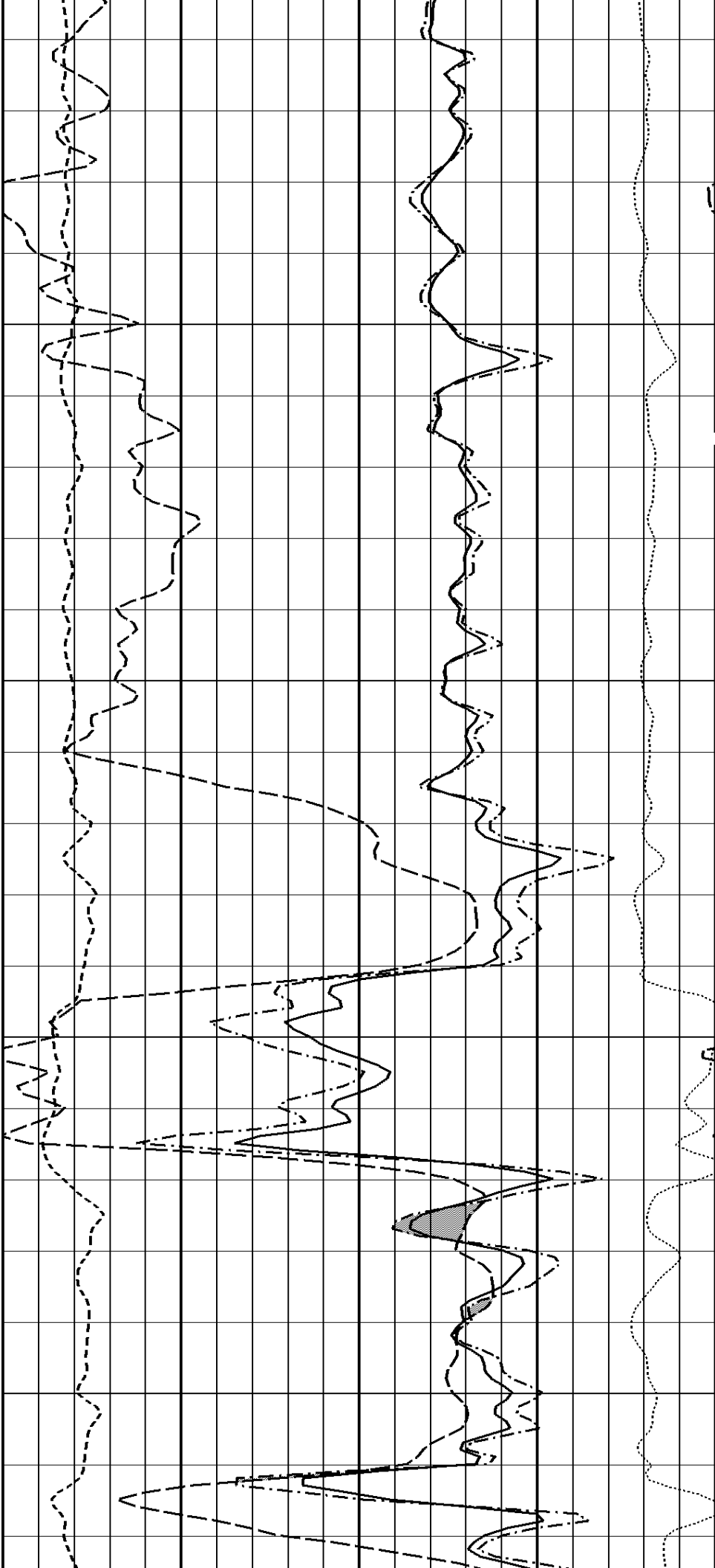


-400Cu.Ft

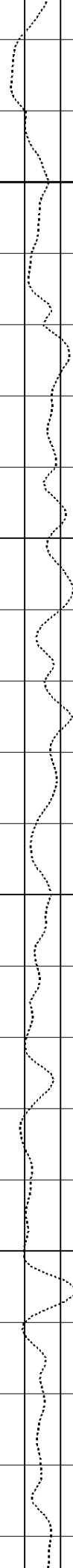
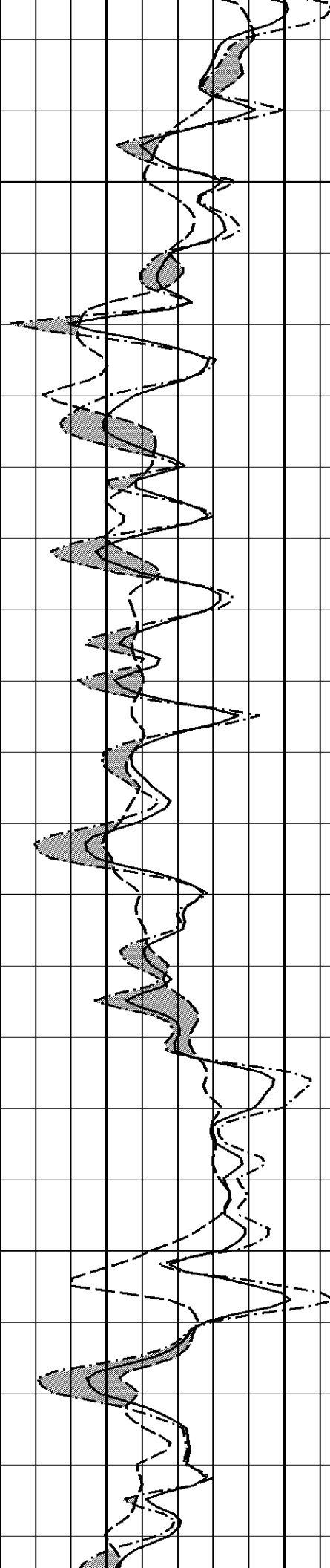
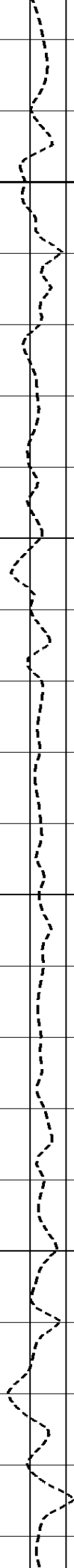
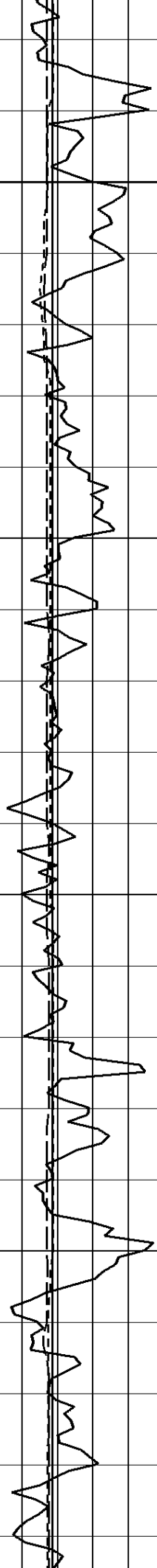


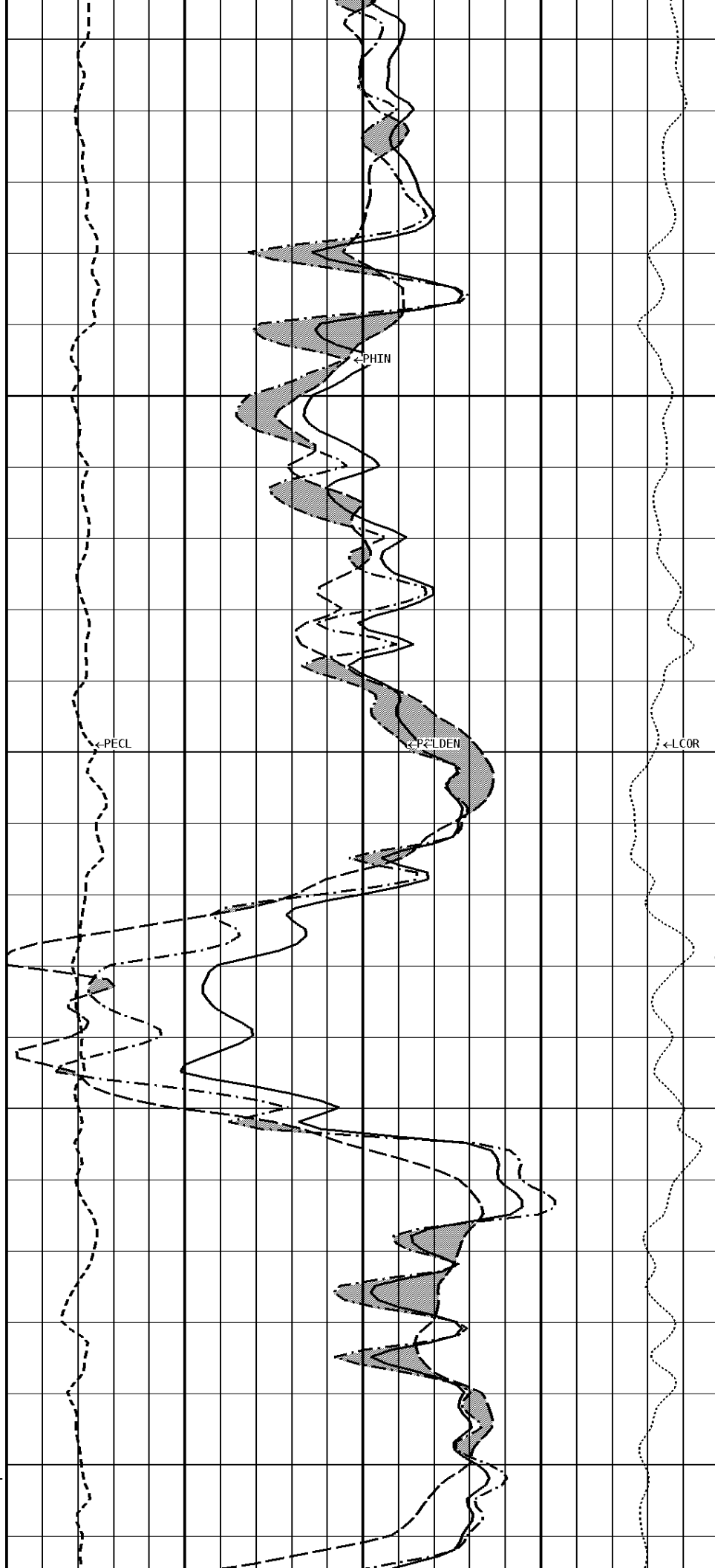
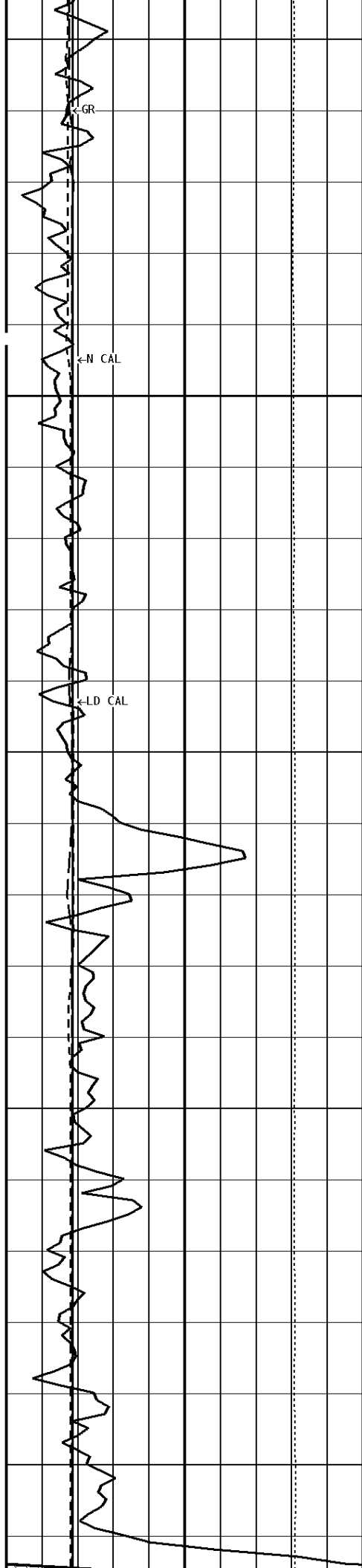


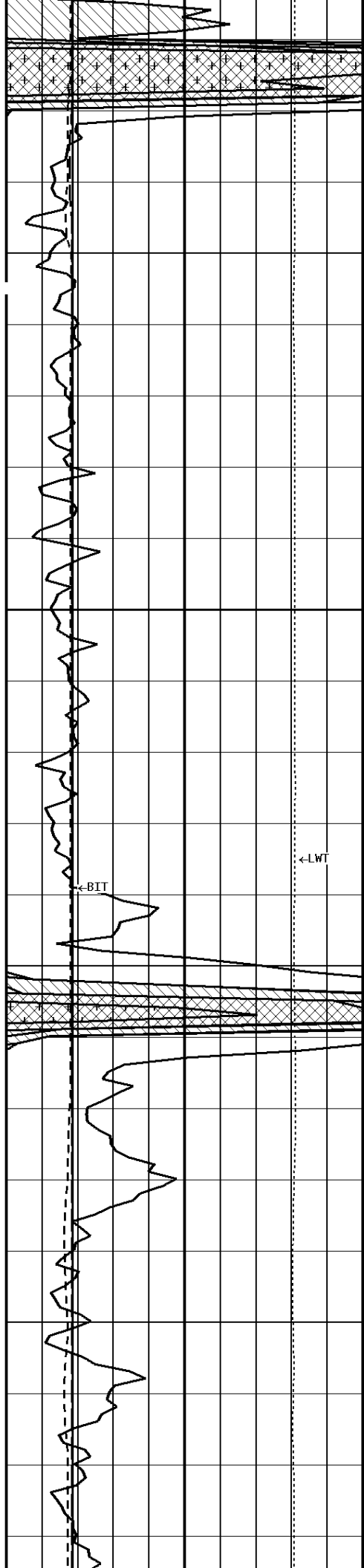
200Cu.Ft--



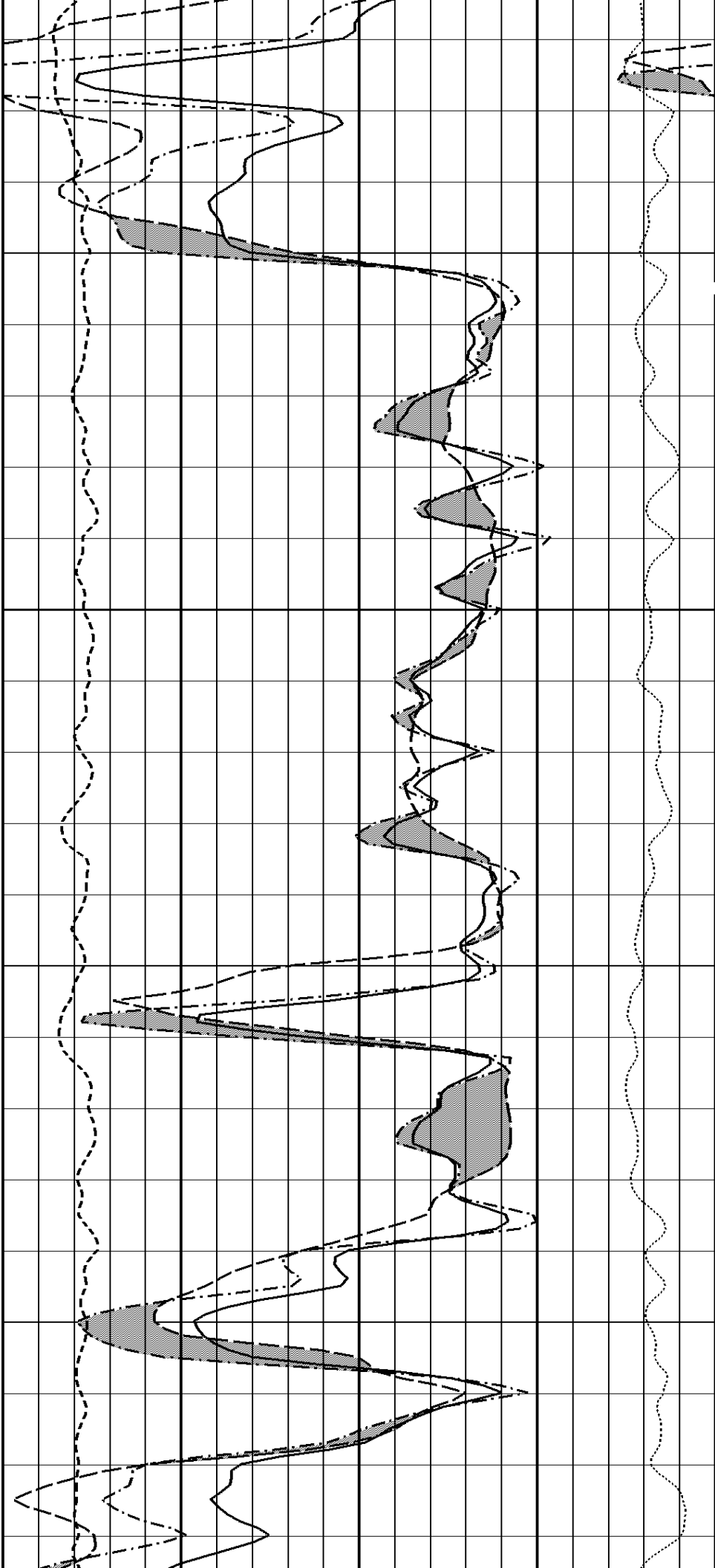
2800

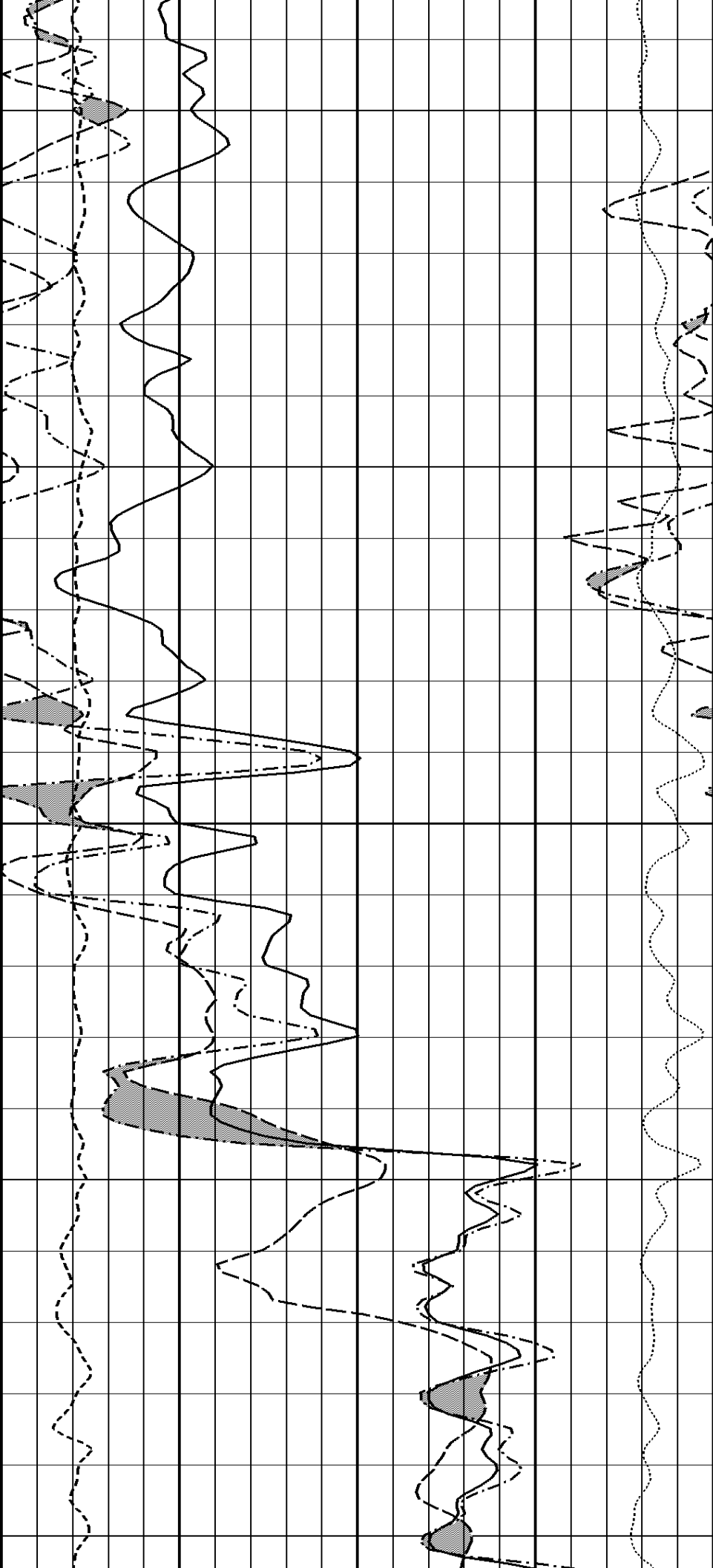
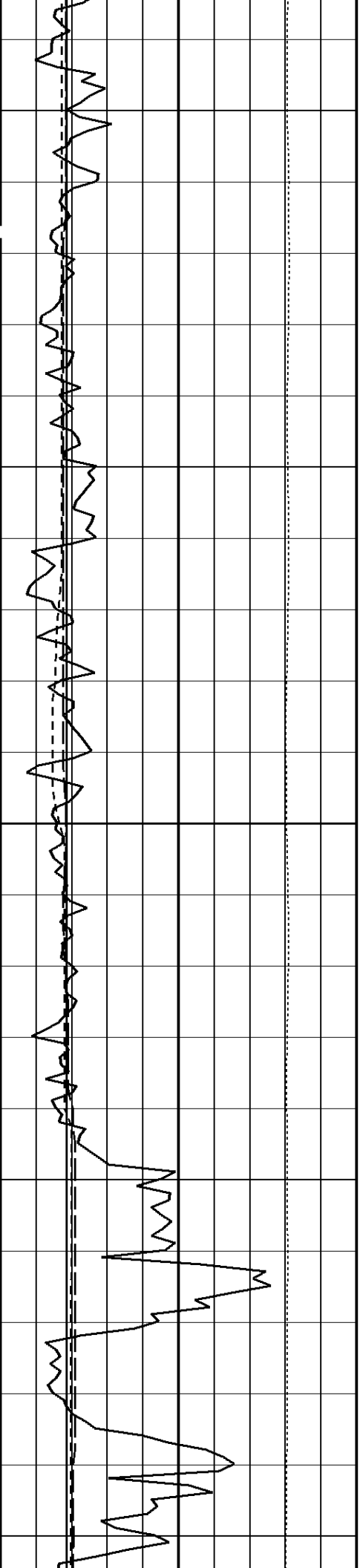


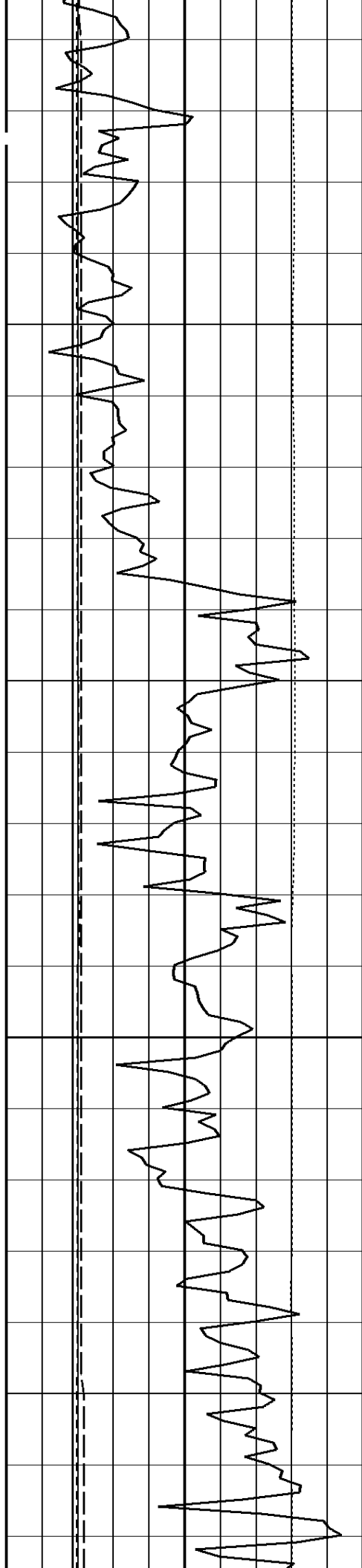




2900

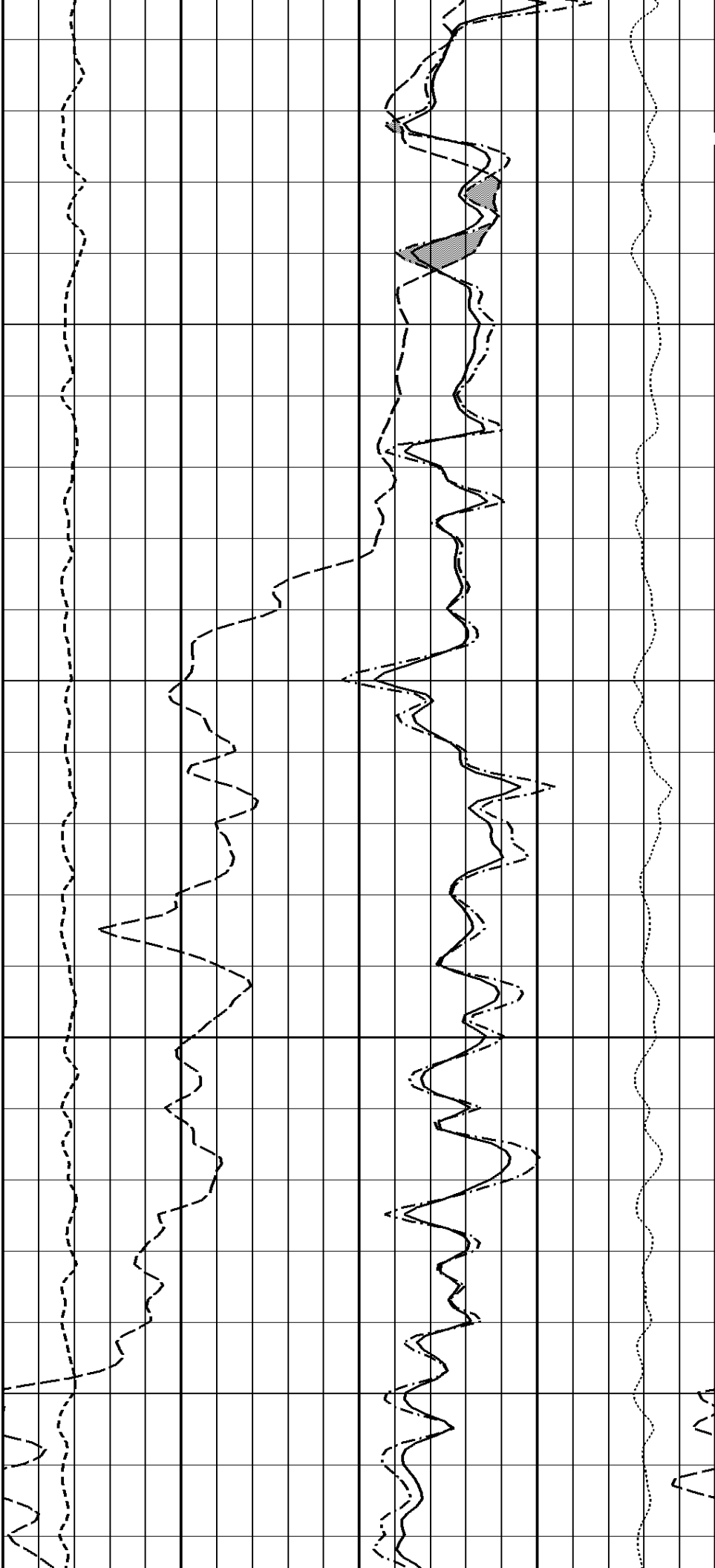


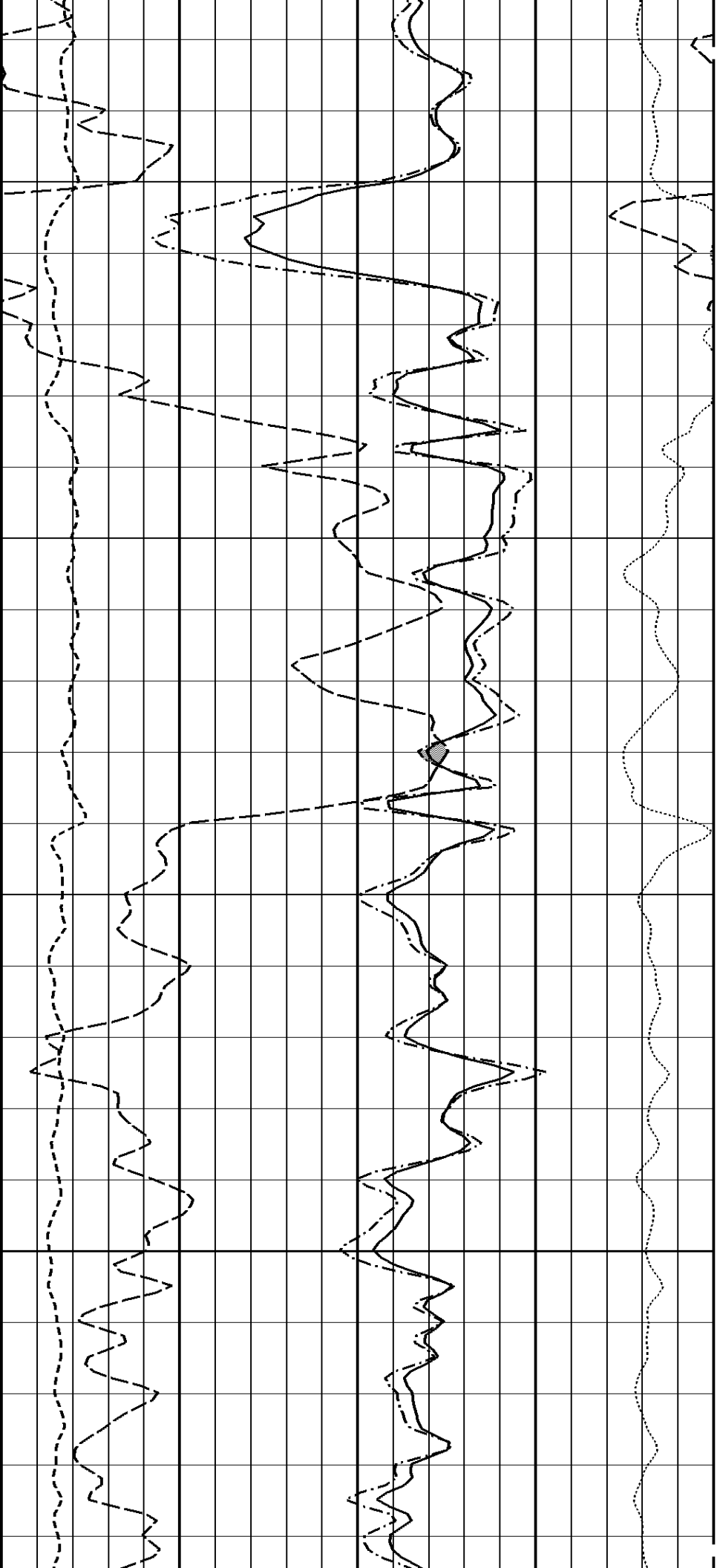
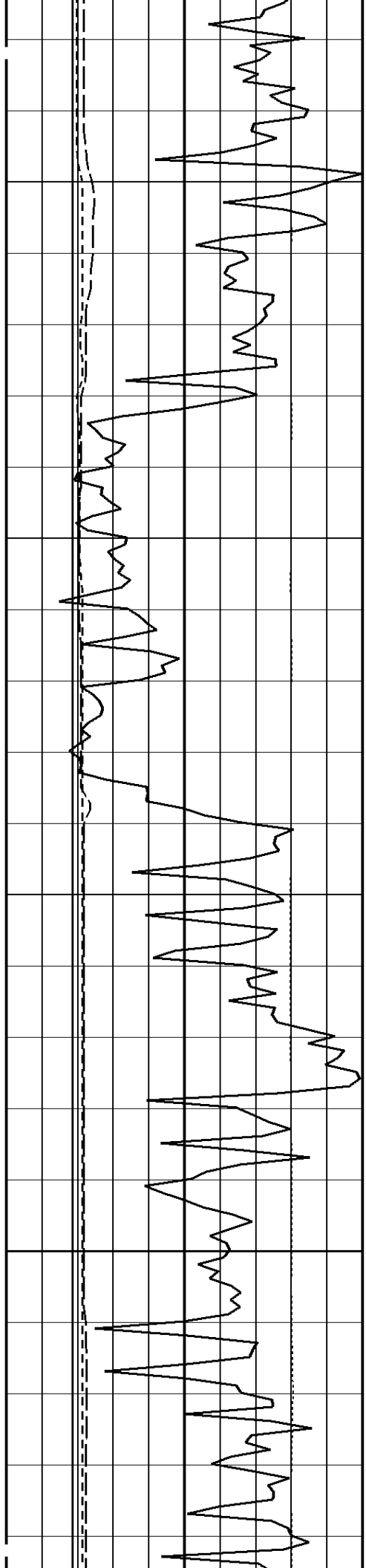


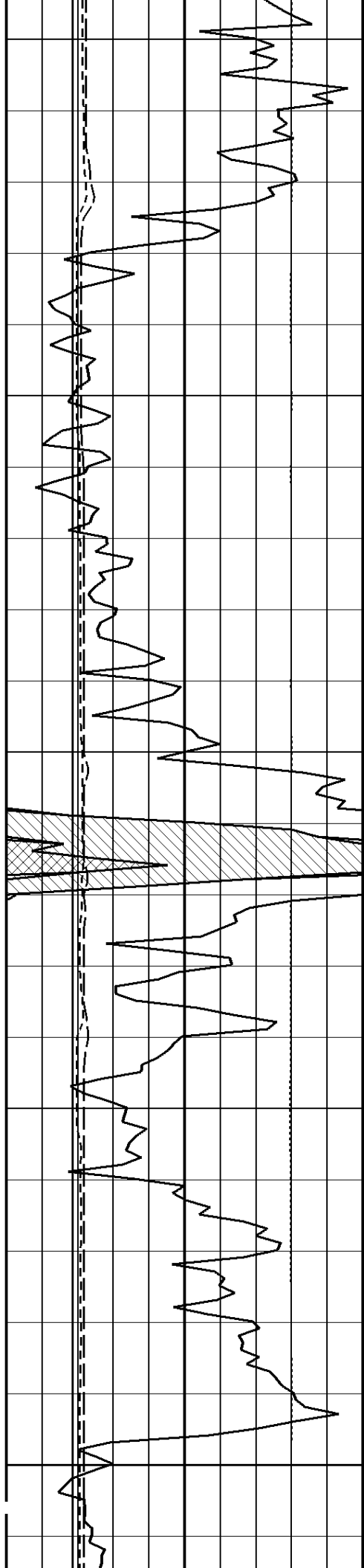


--300Cu.Ft

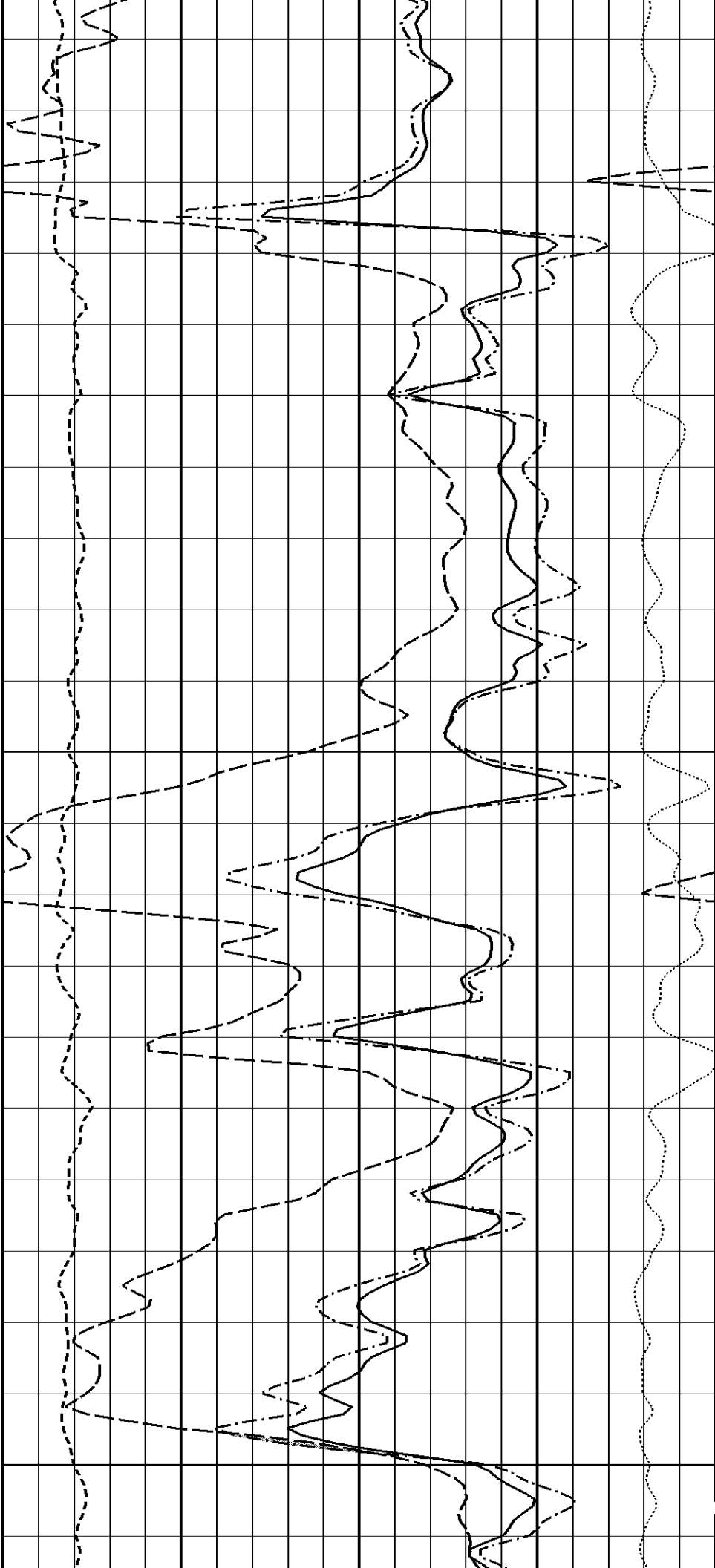
3000

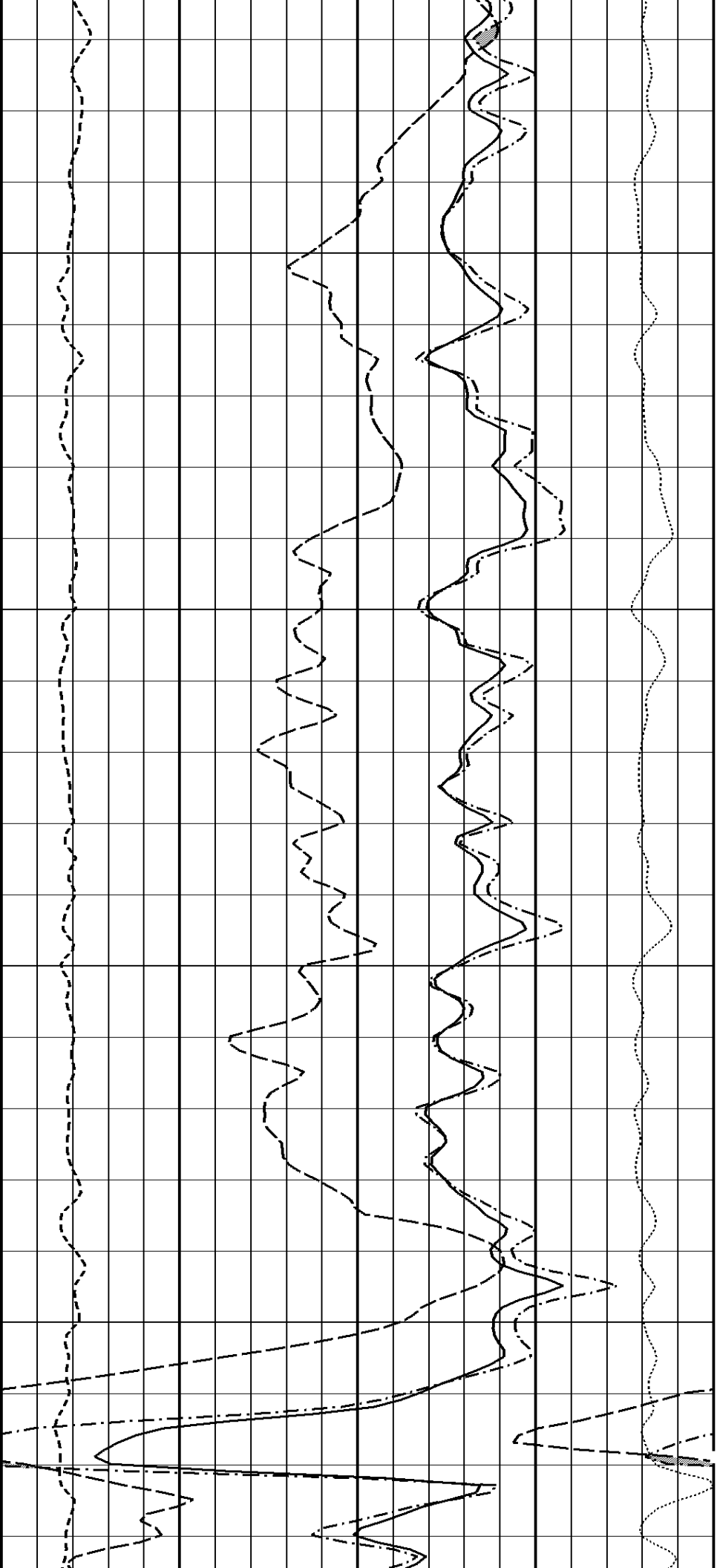
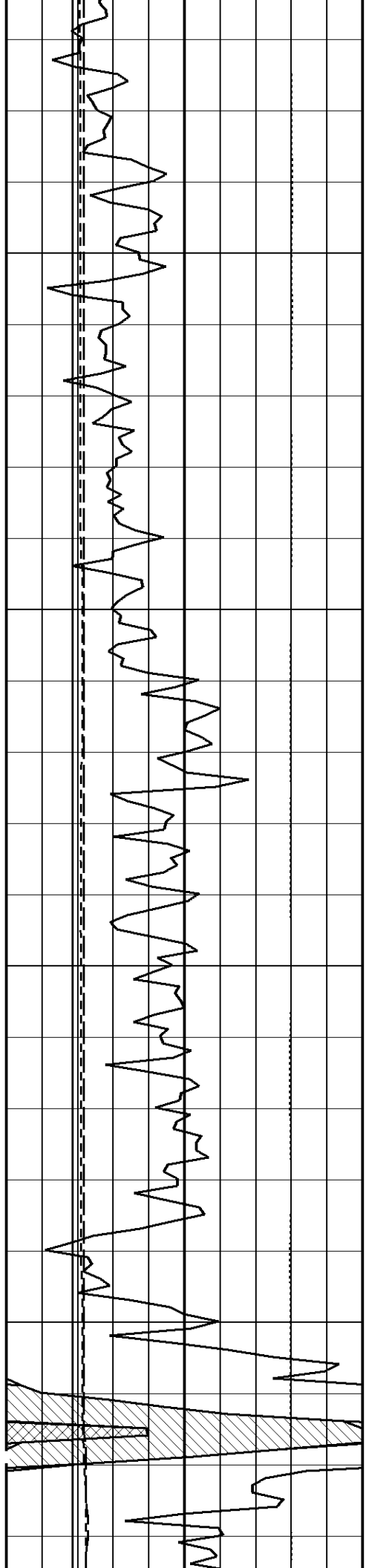


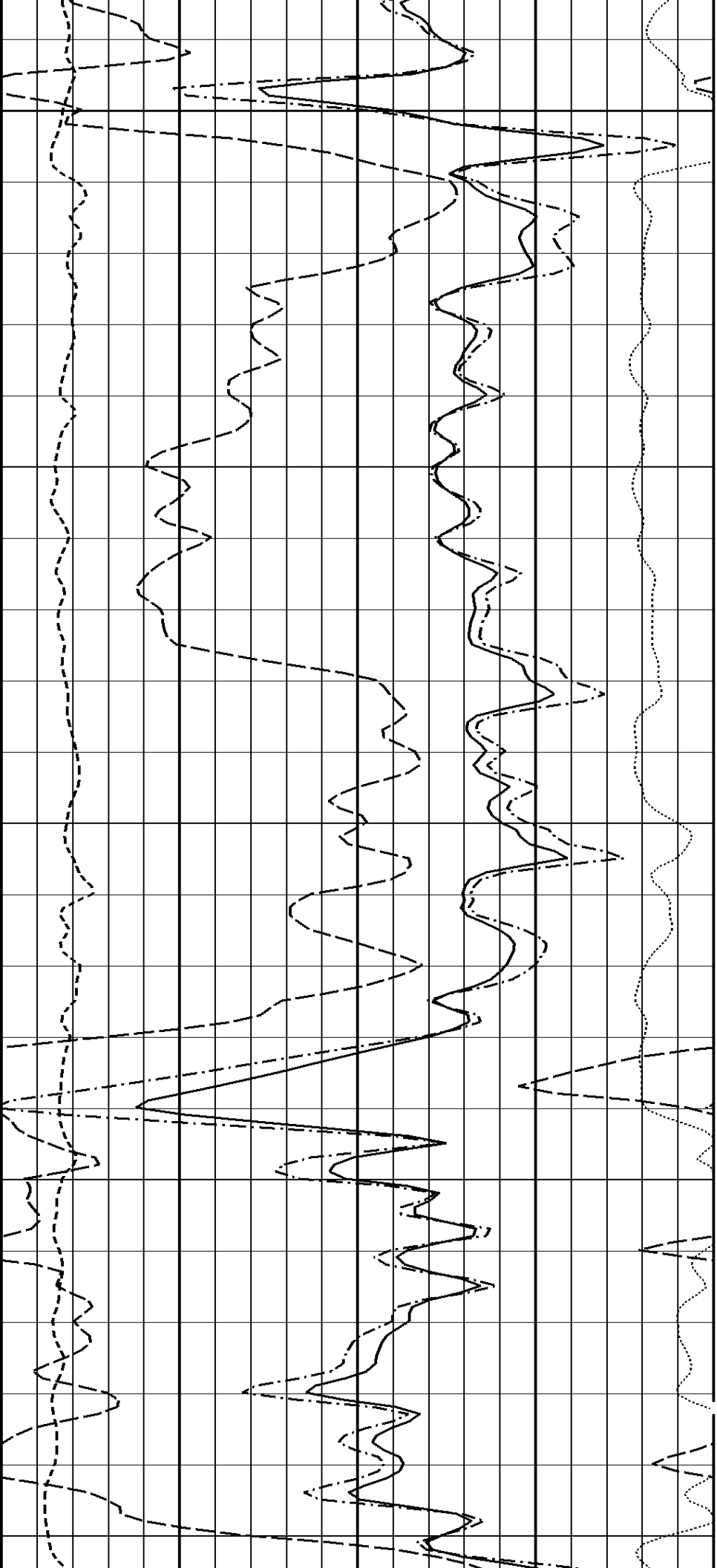
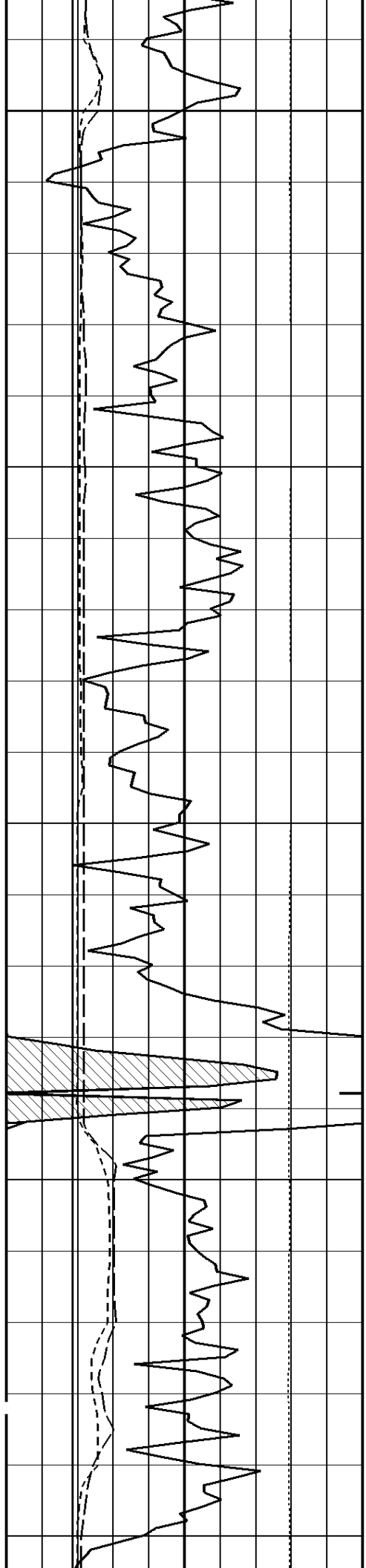


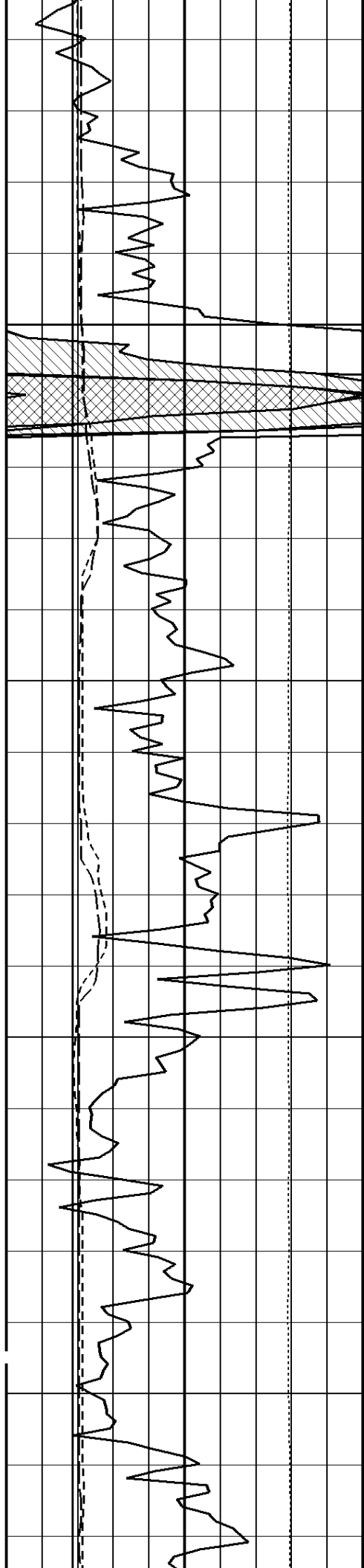


3100

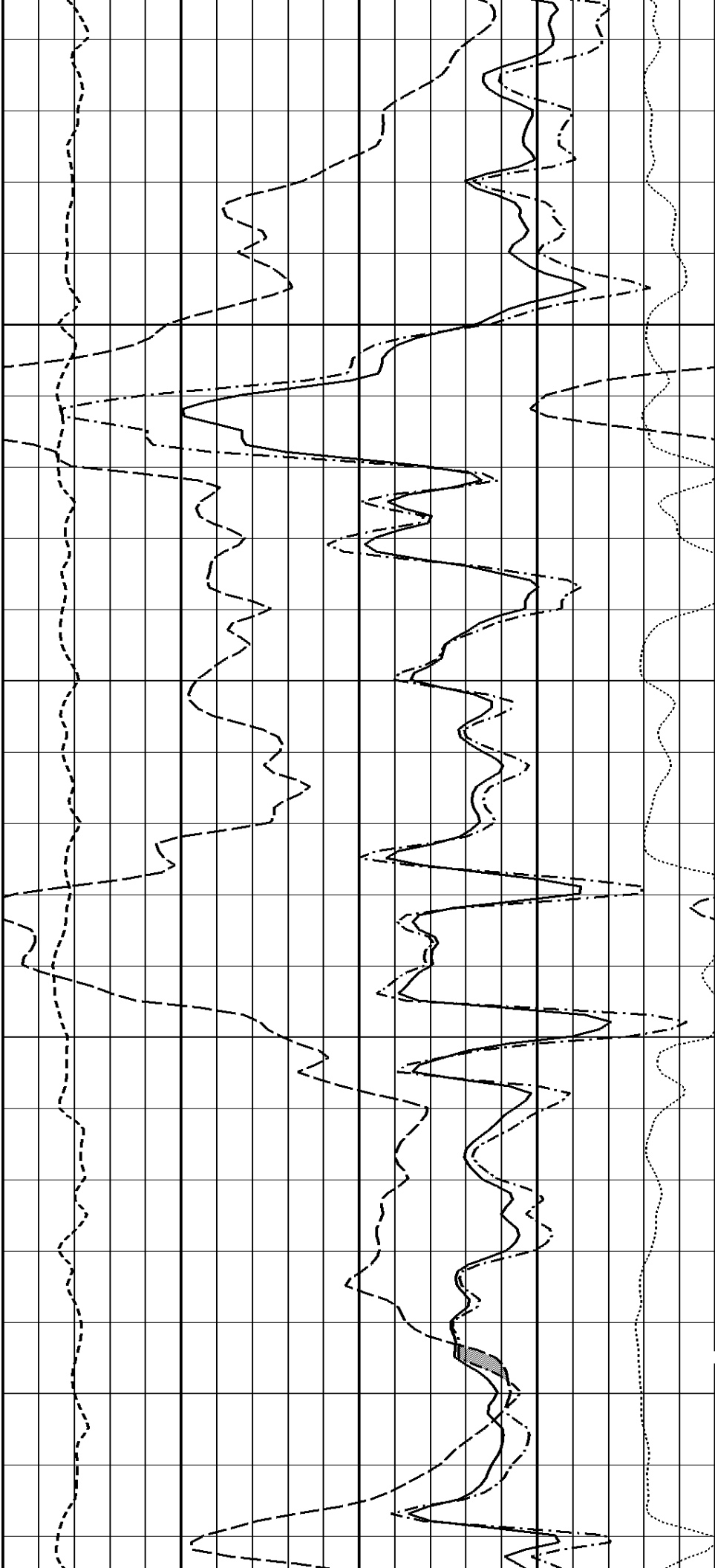


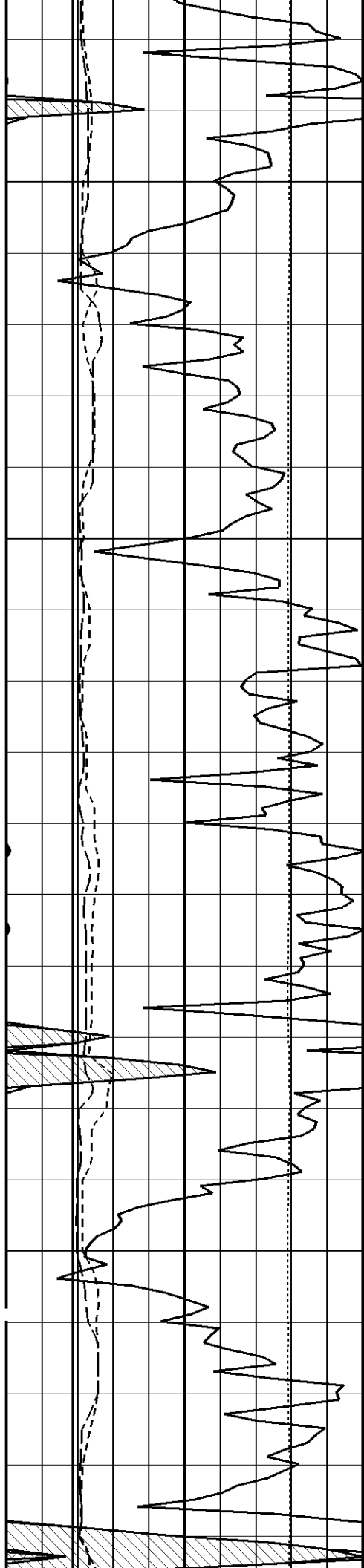




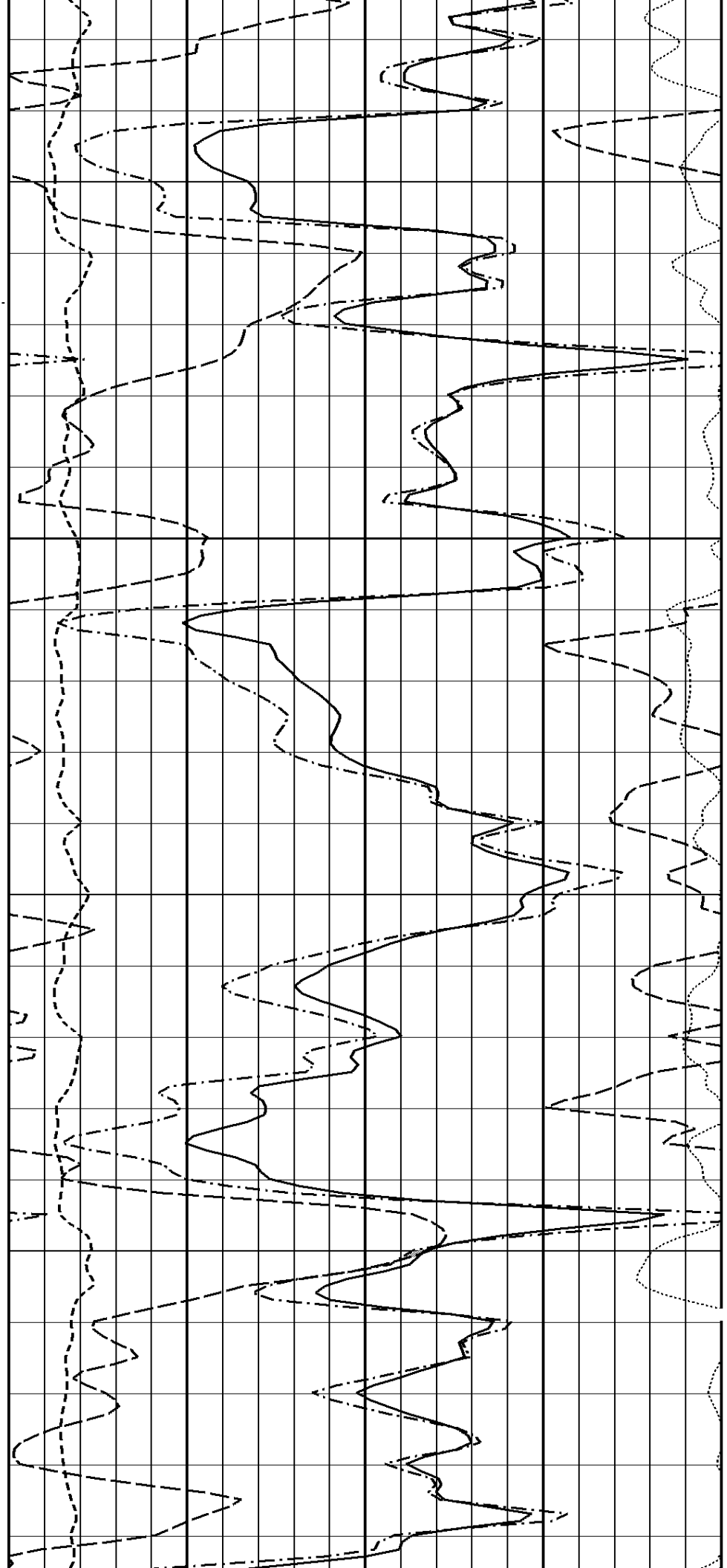


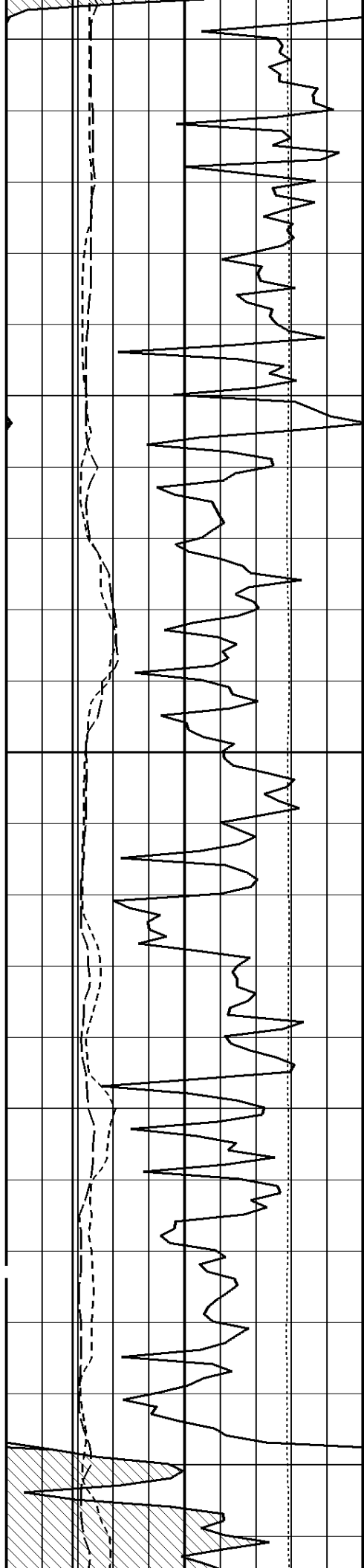
3200





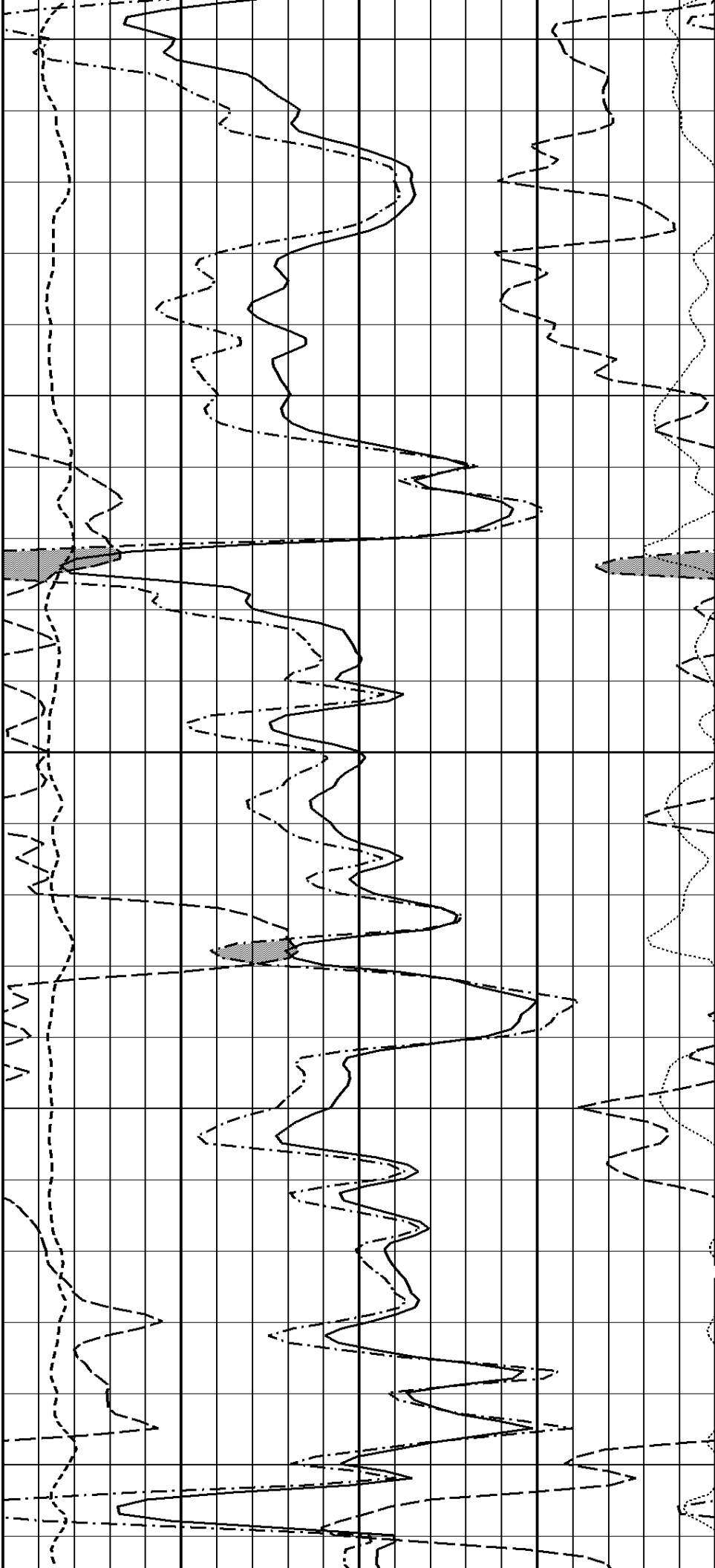
--200Cu.Ft

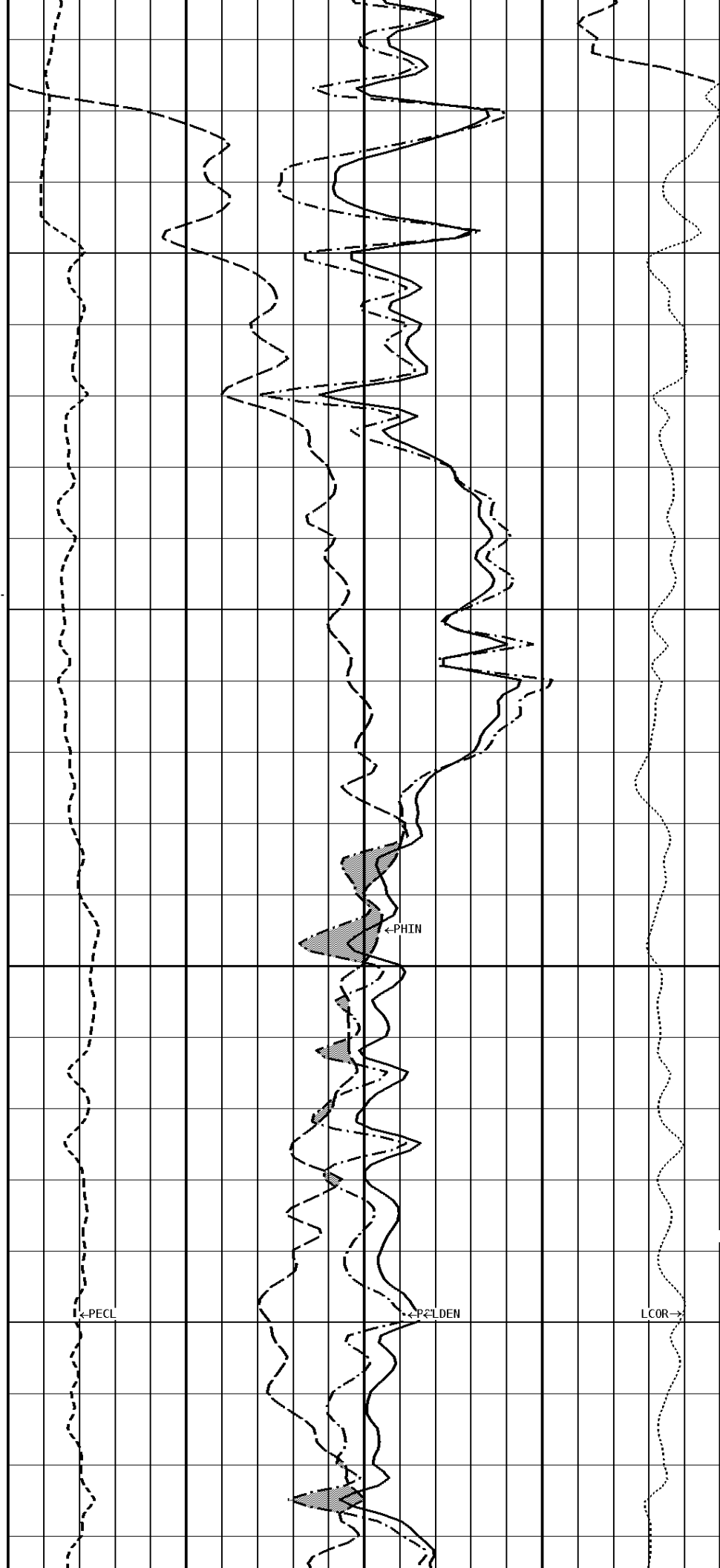
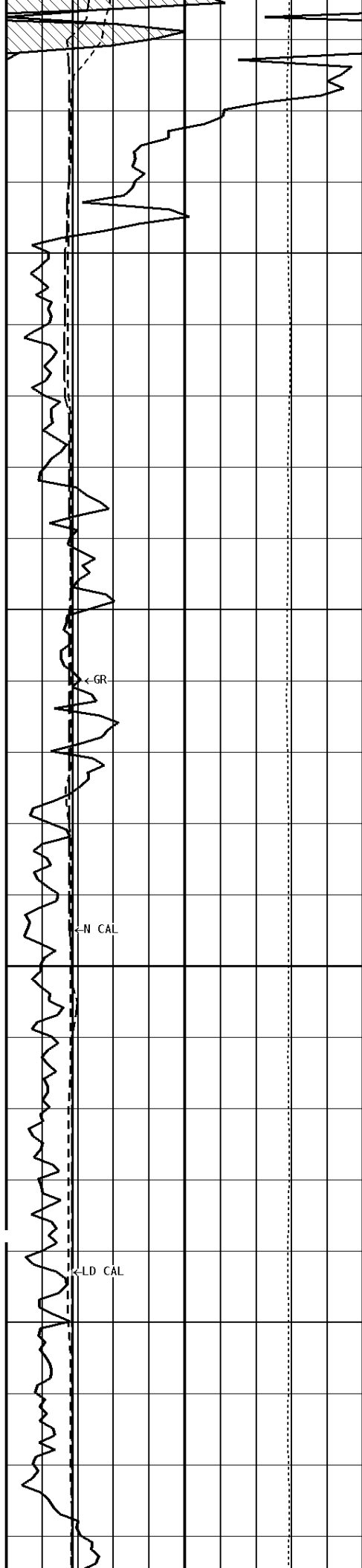


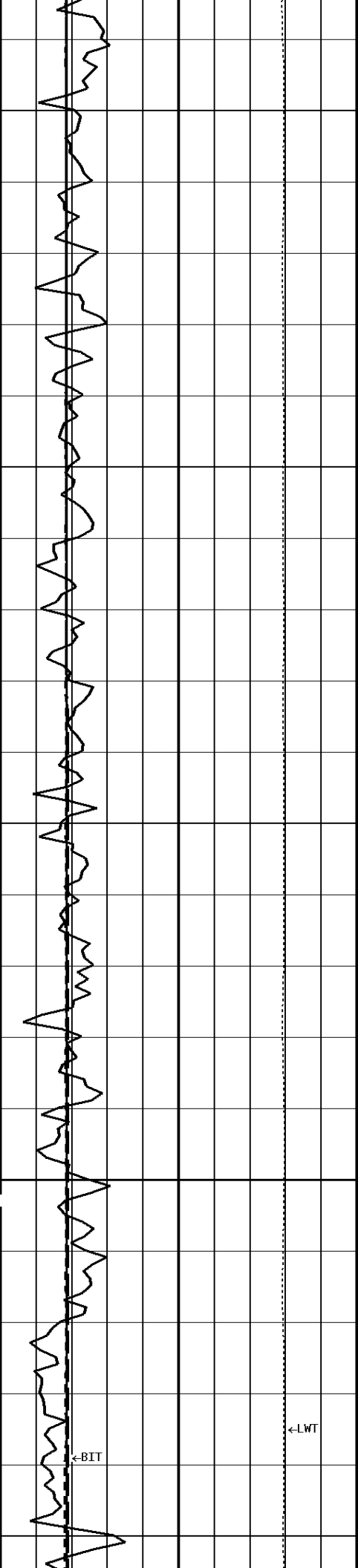


100Cu.Ft--

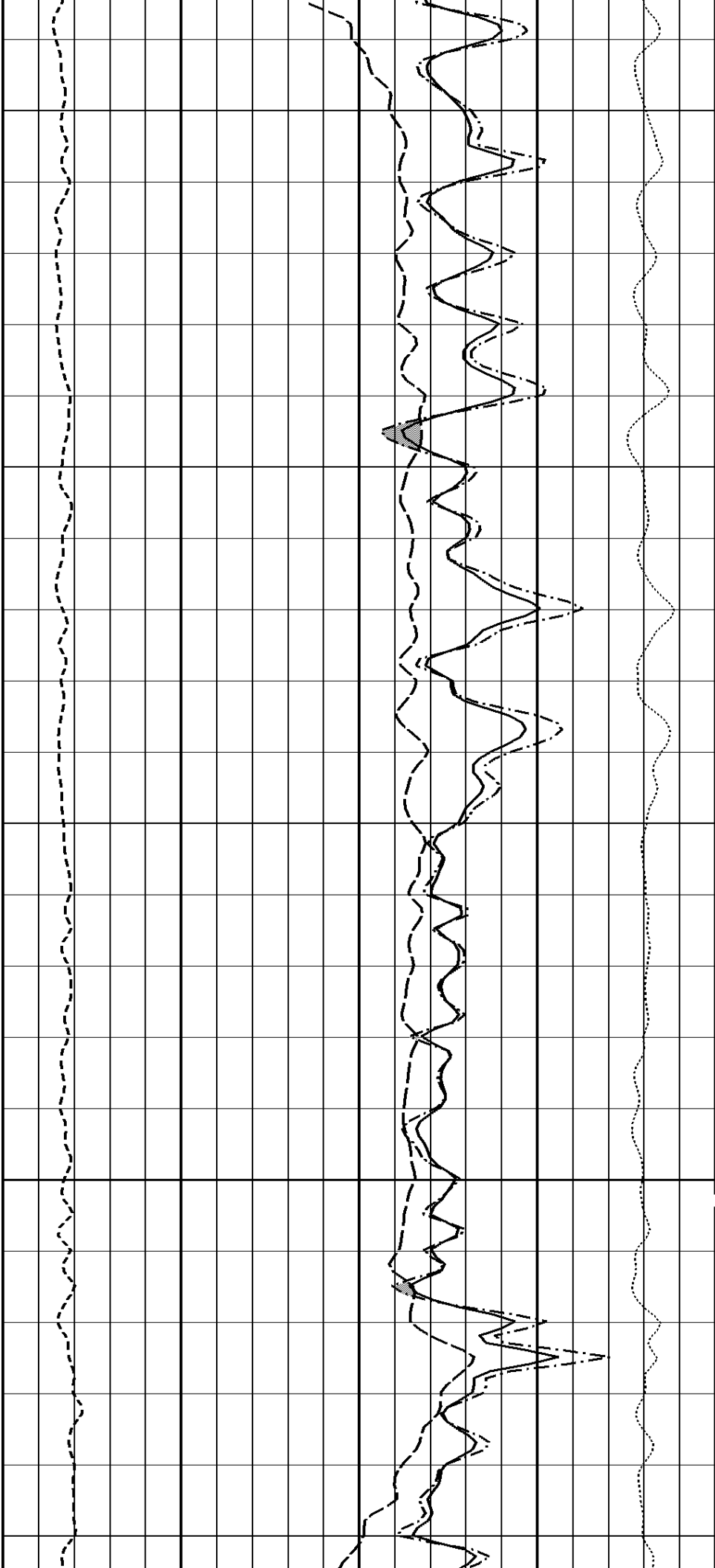
3300

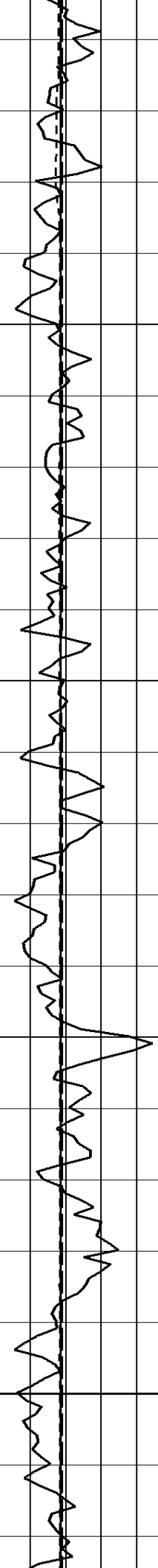
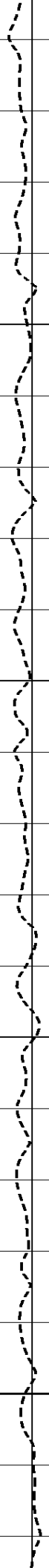
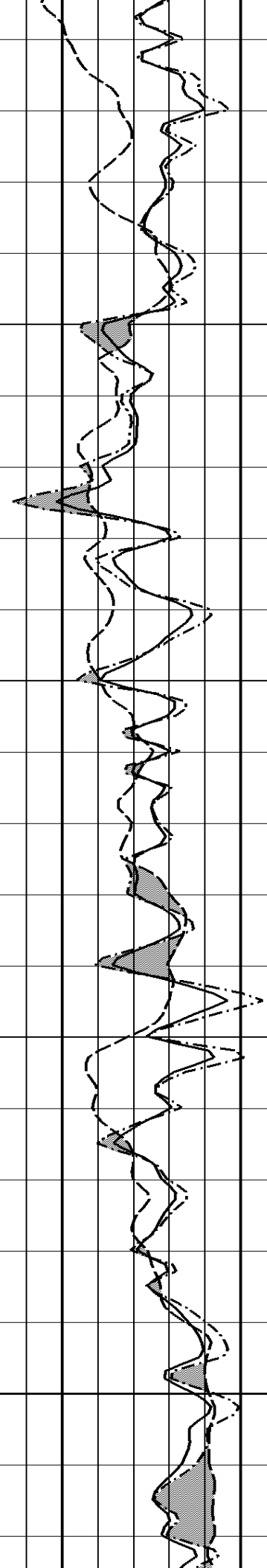


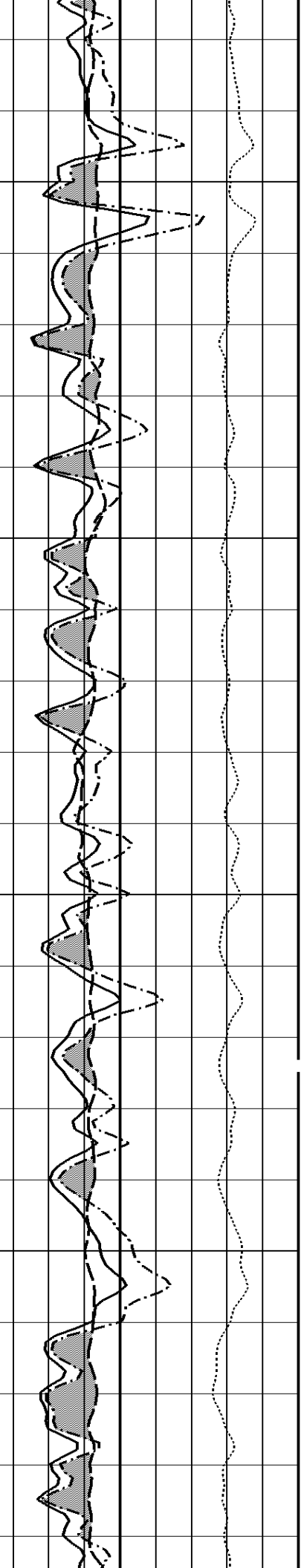
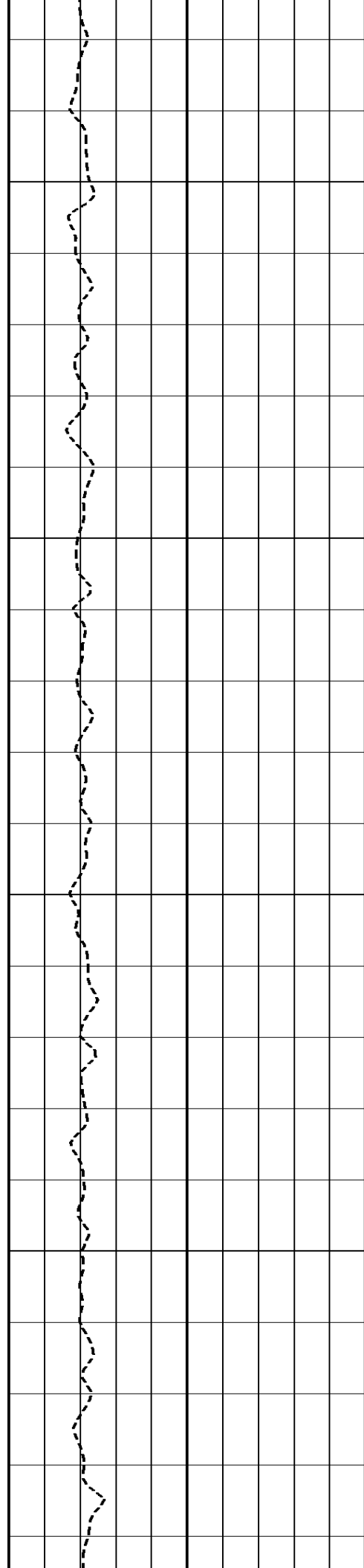
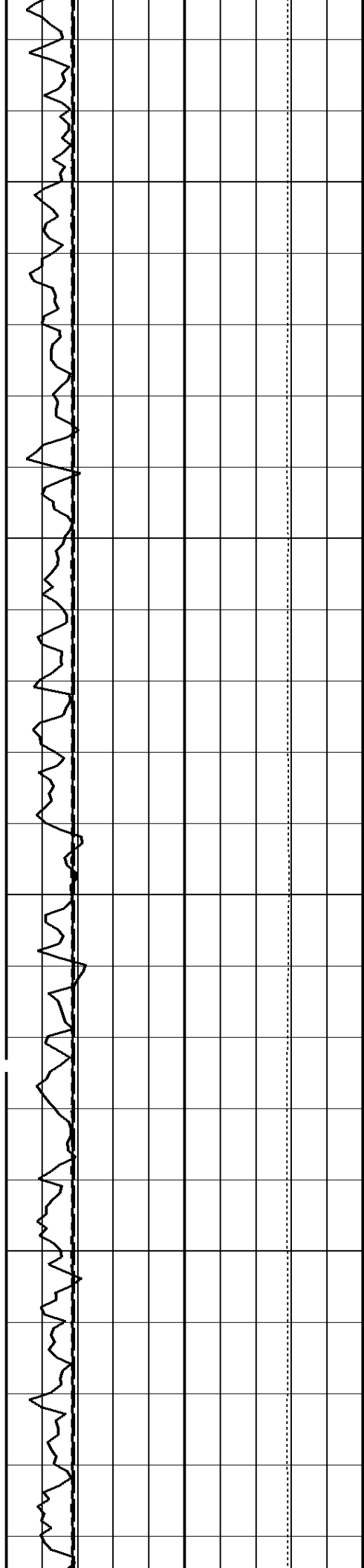




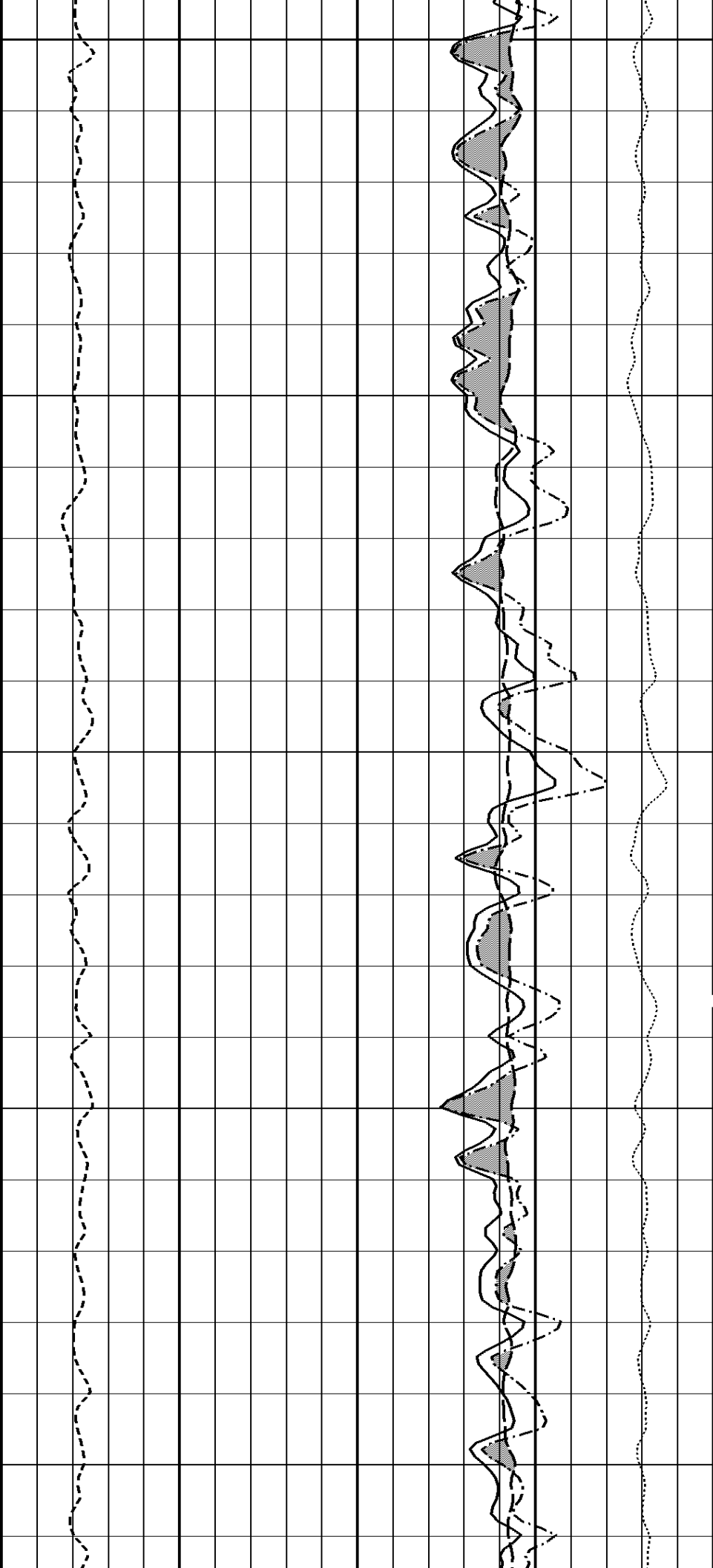
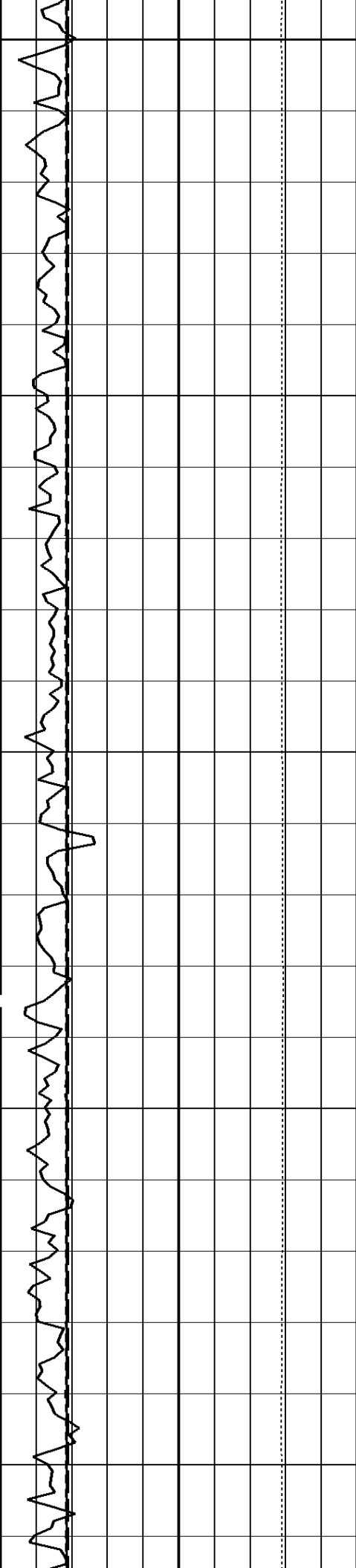
3400

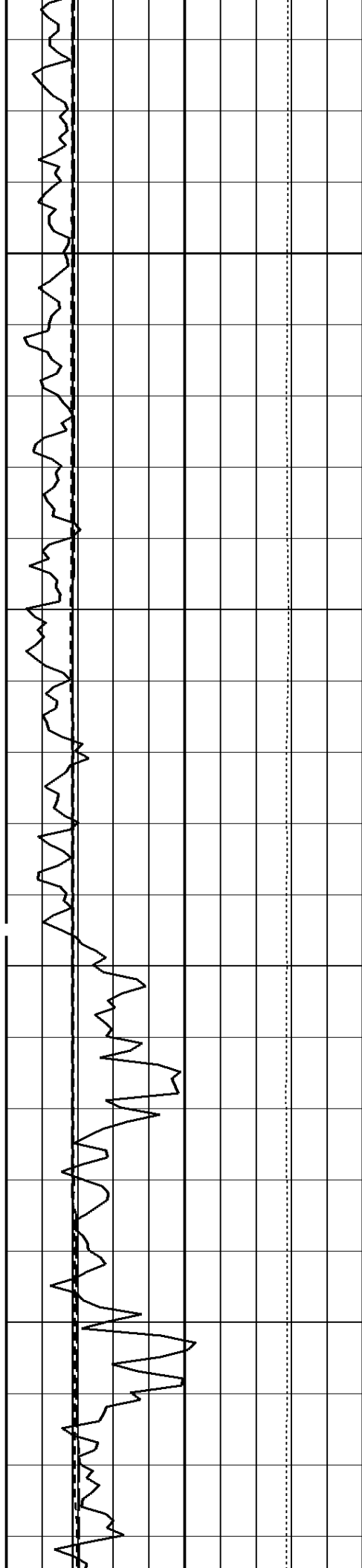




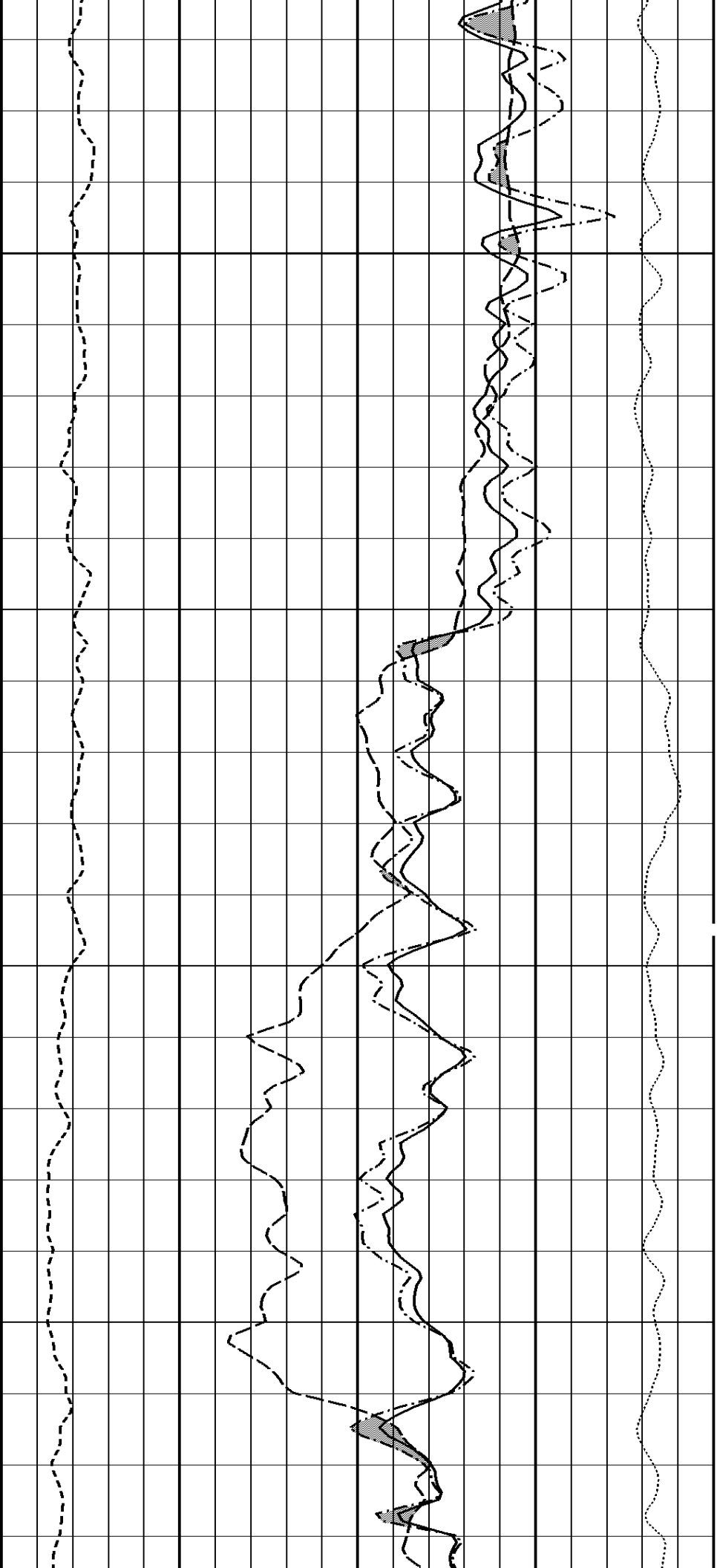


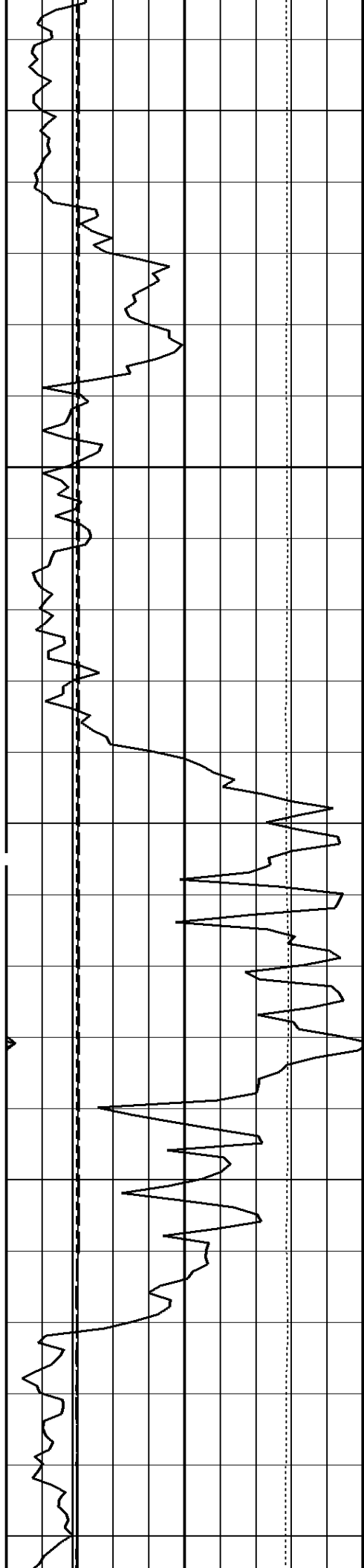
3500



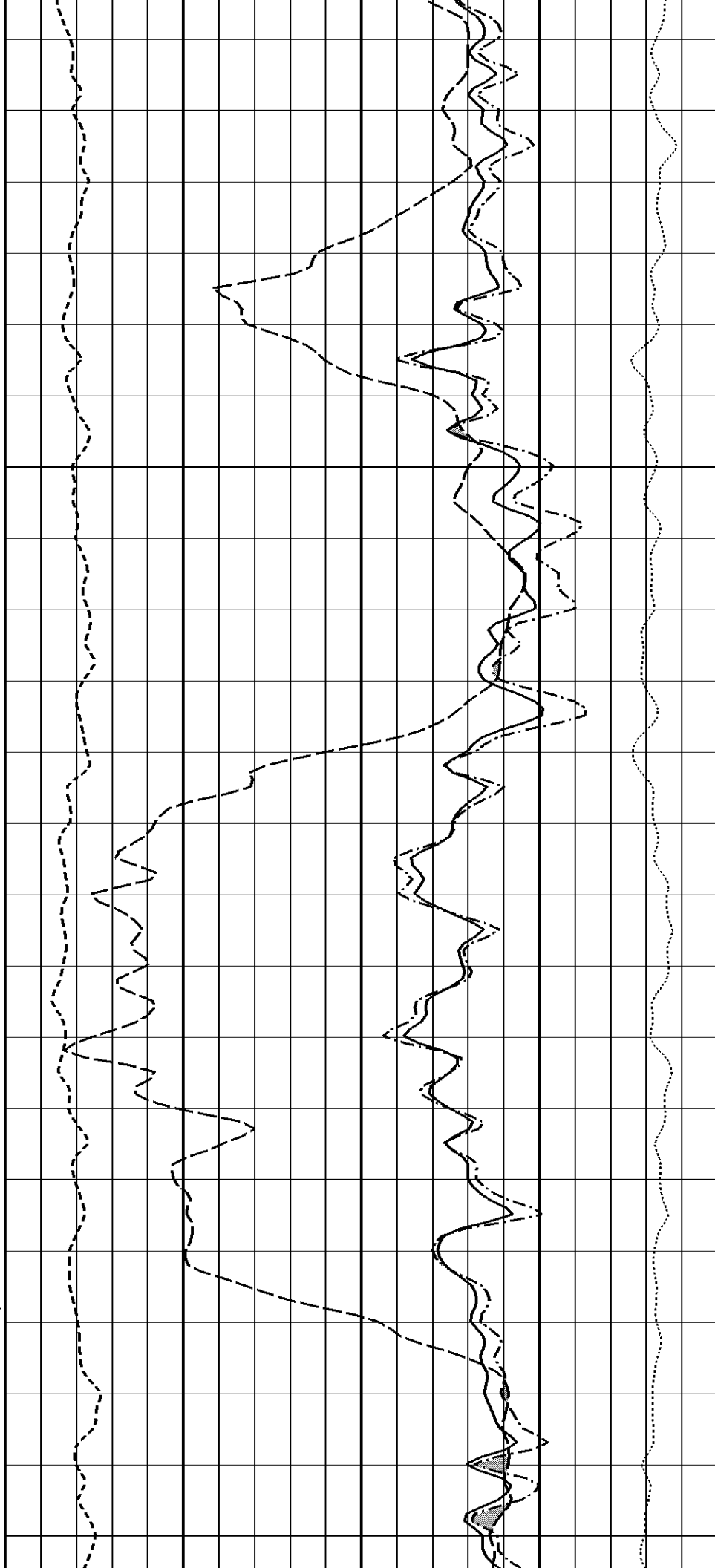


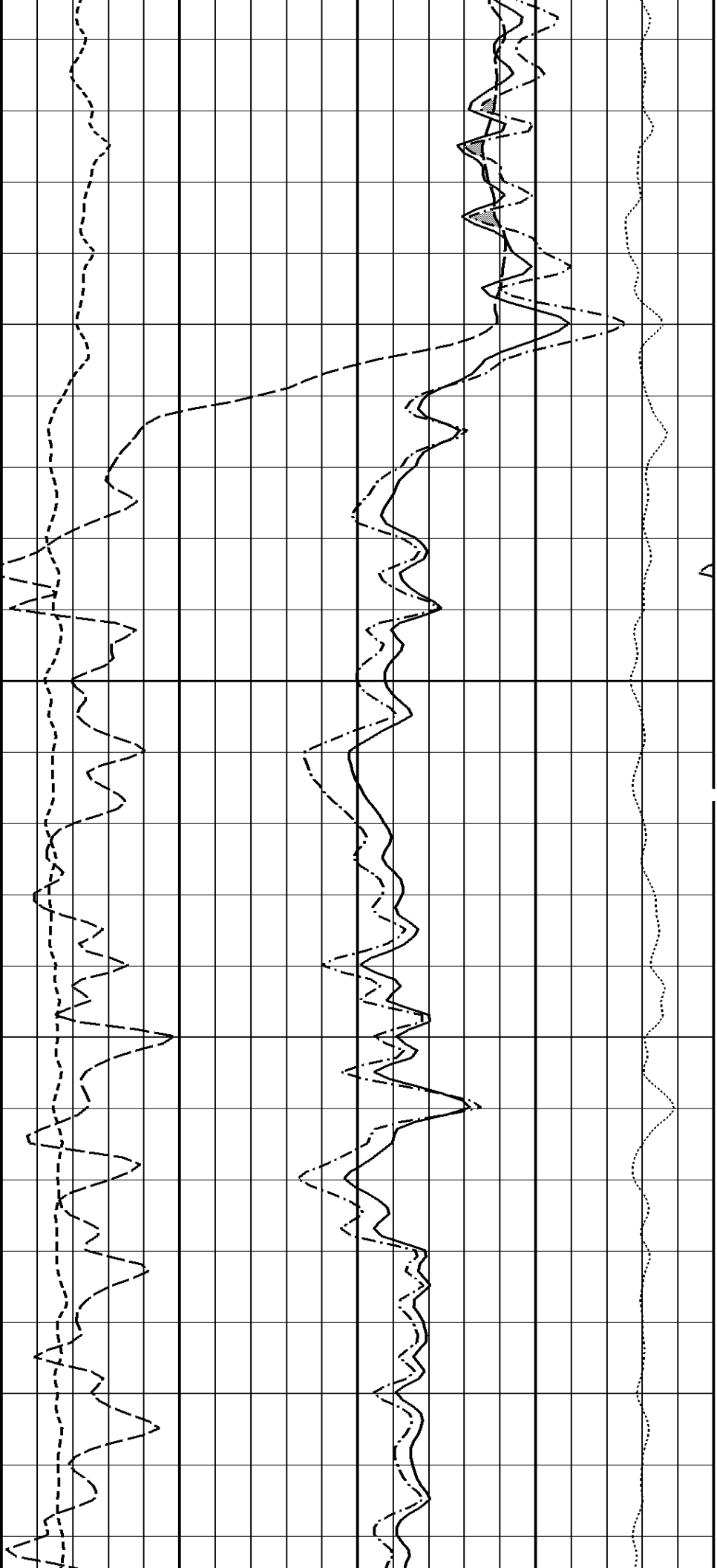
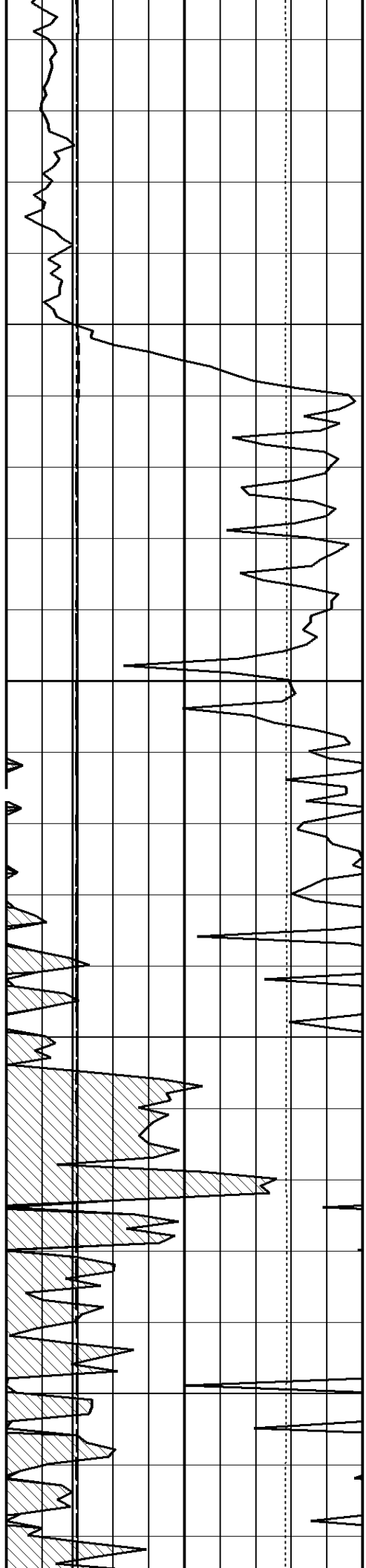
--100Cu.Ft

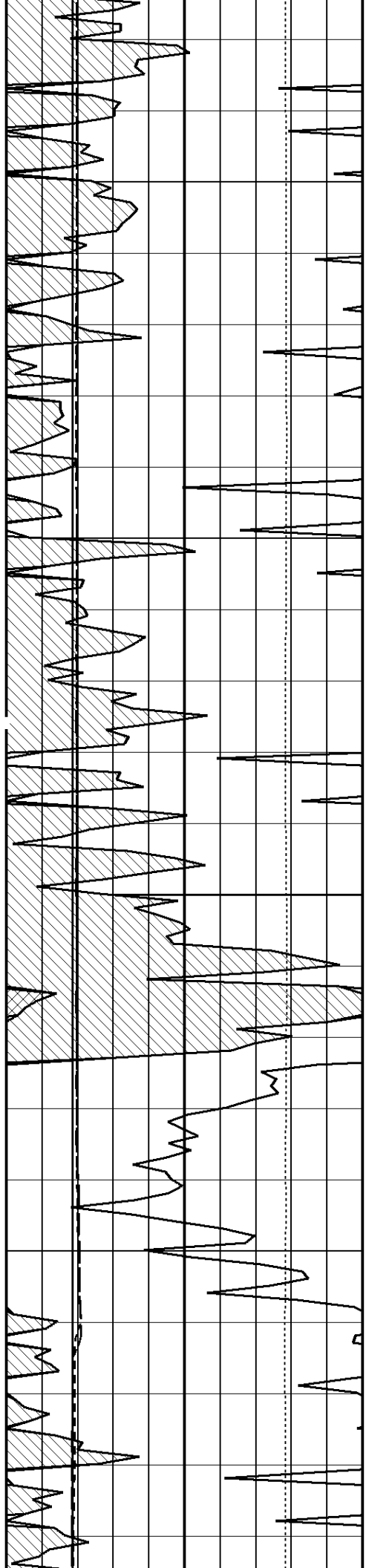




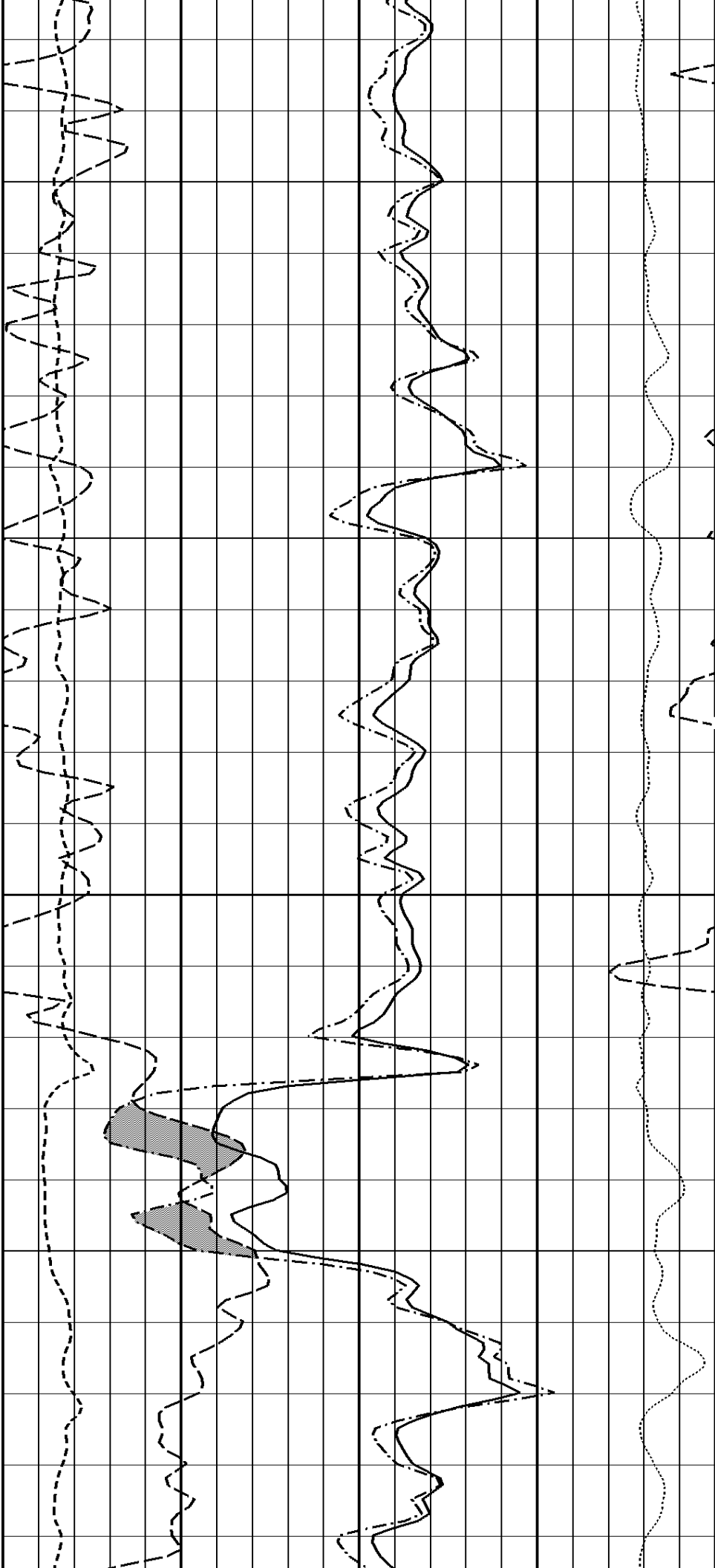
3600

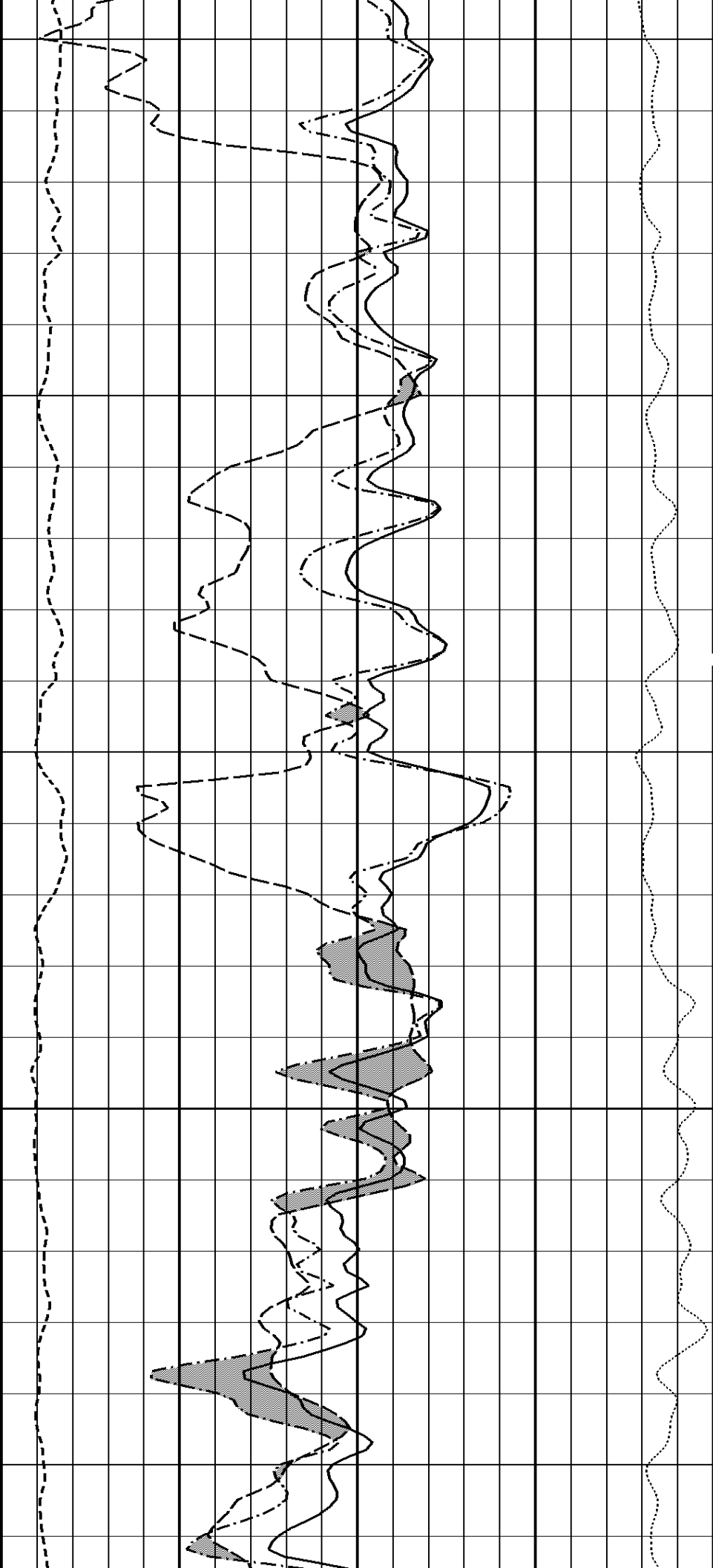
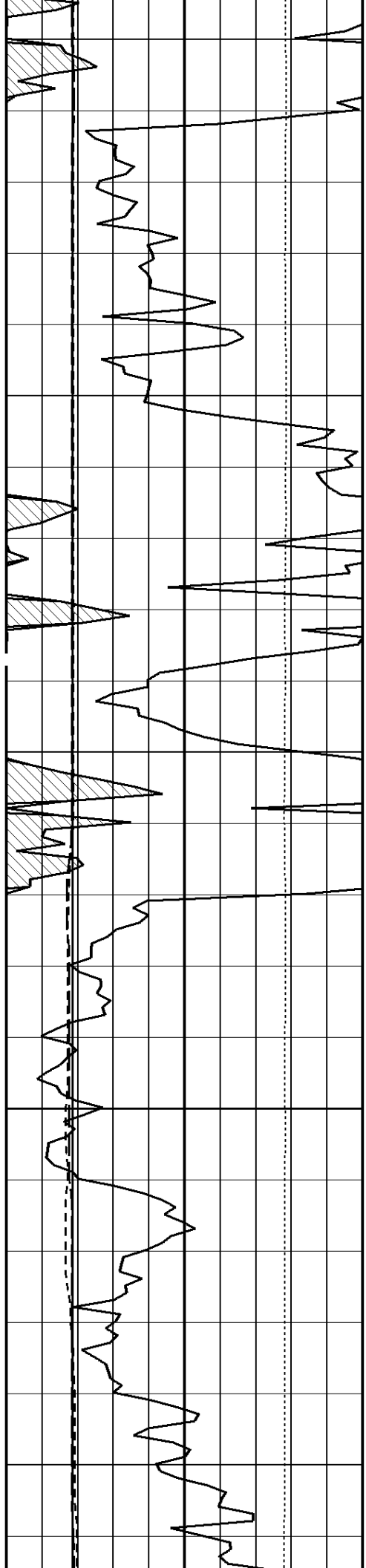


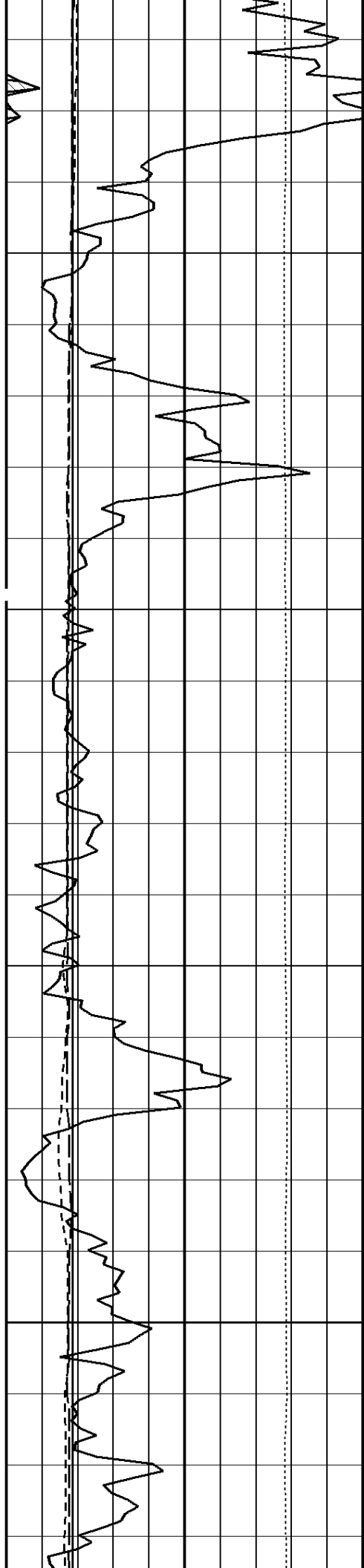




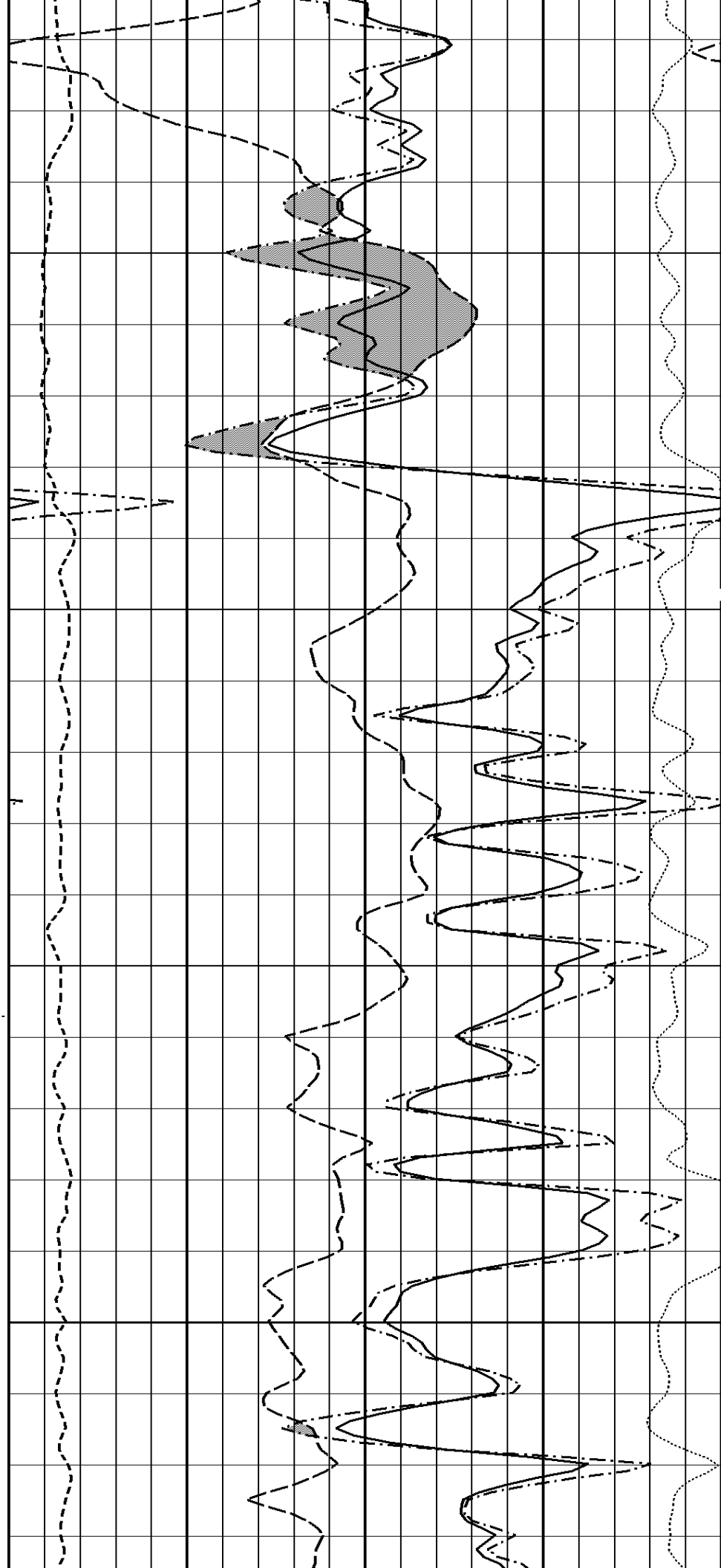
3700

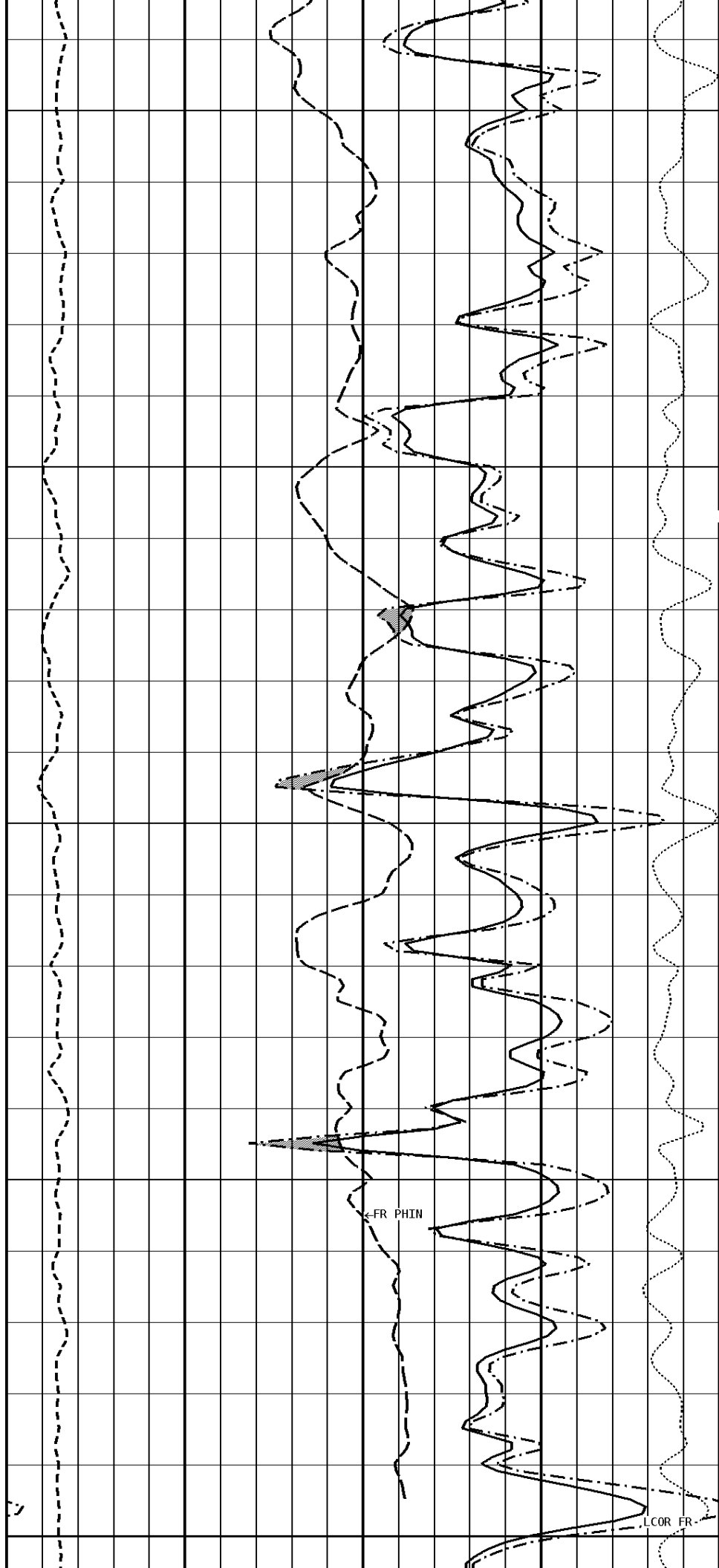
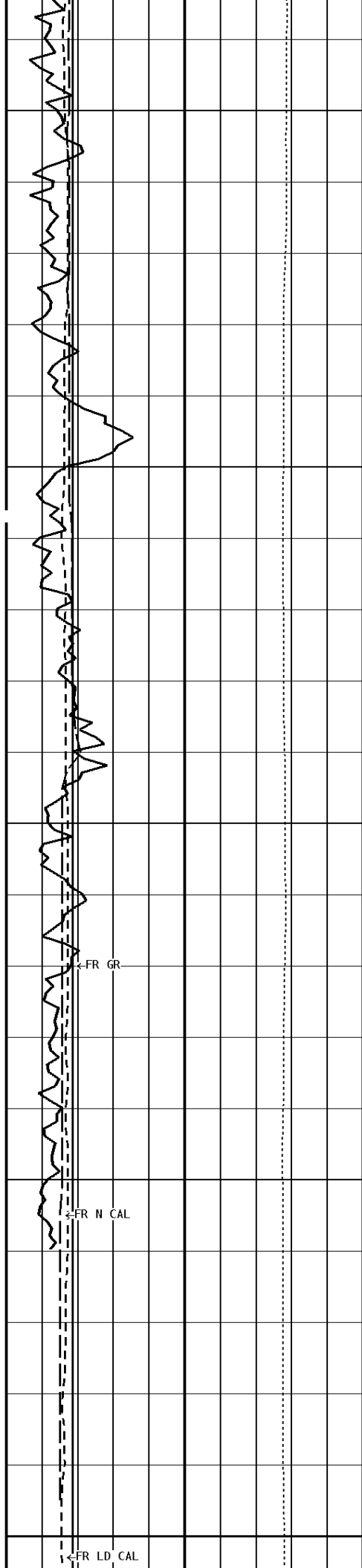


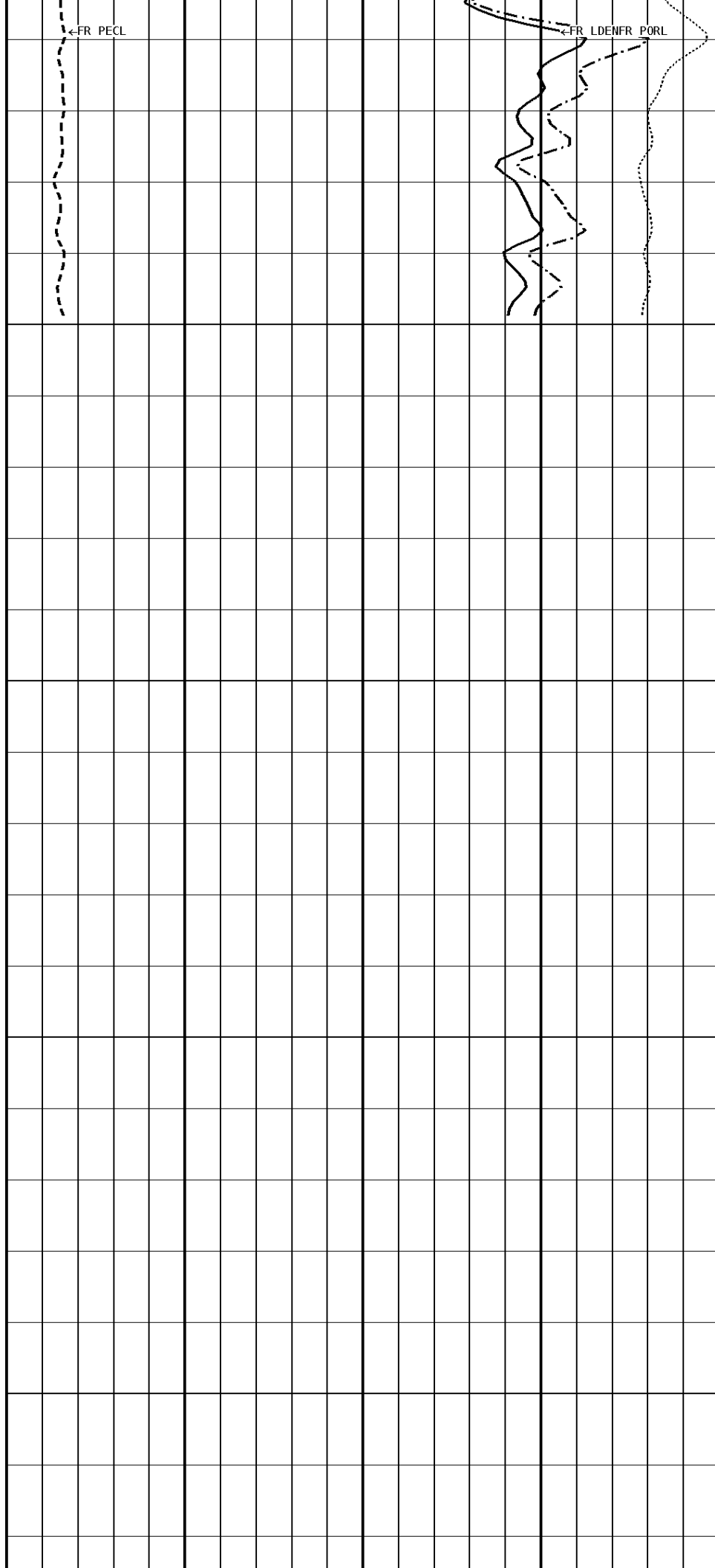
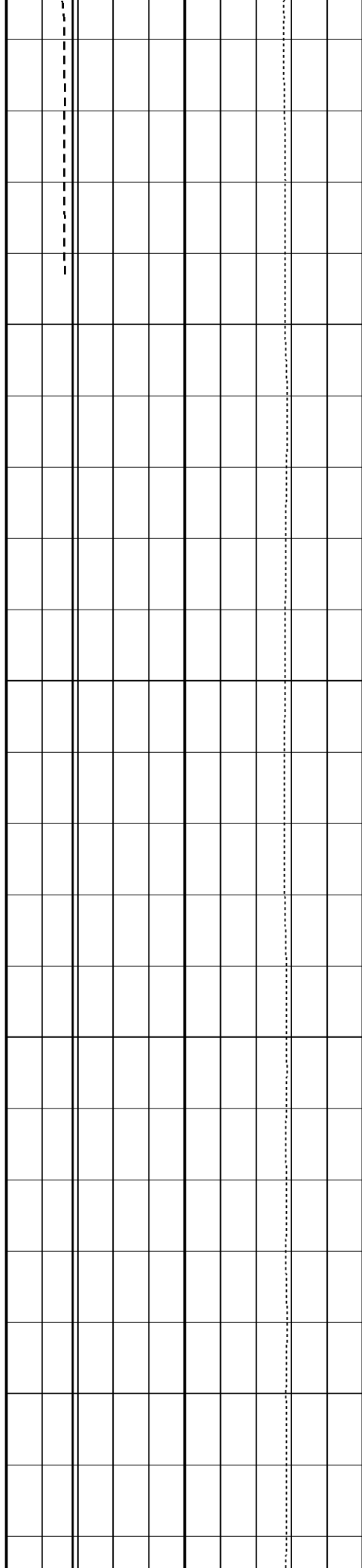


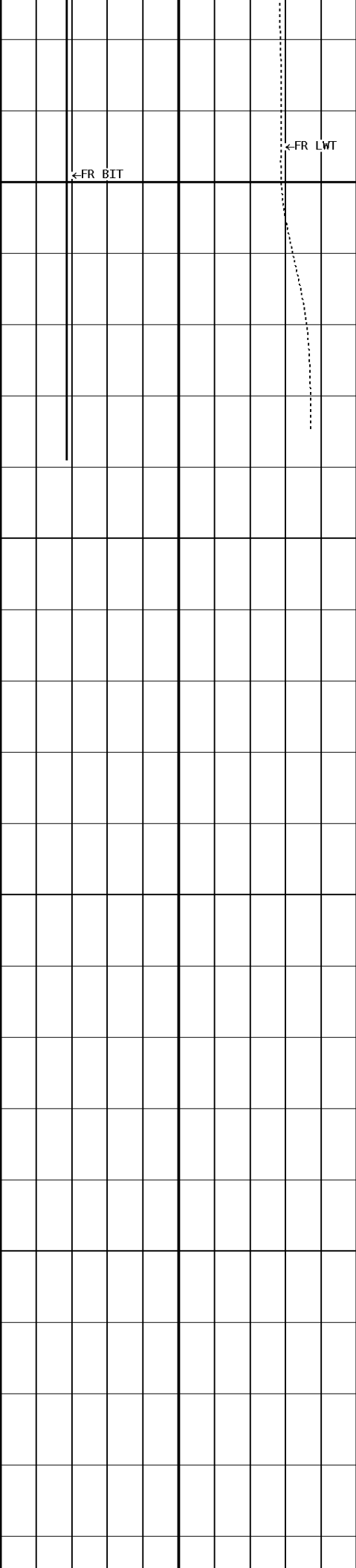


3800

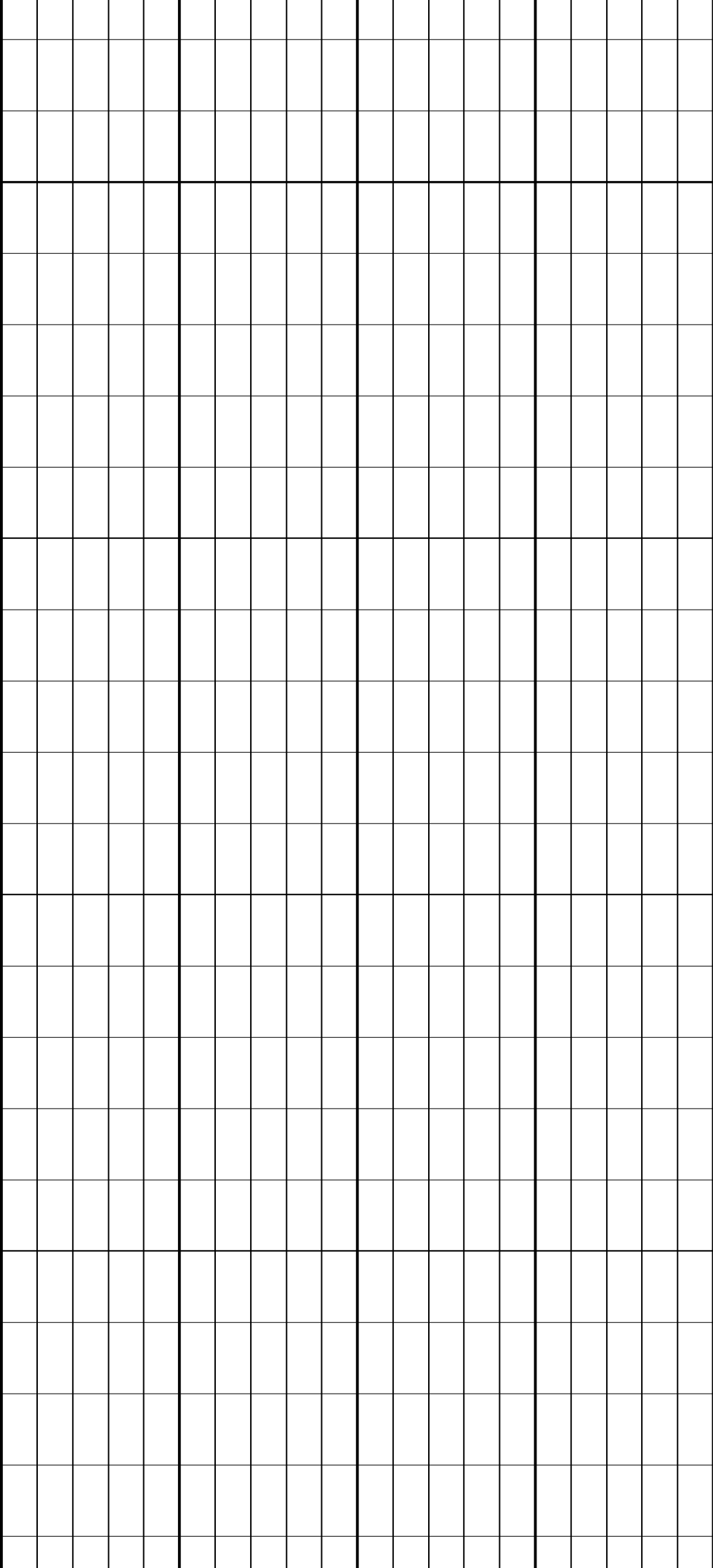








3900



File #1.1.7

1:48 HIGH RESOLUTION

GAMMA RAY API UNITS		- BHV AHV - CU. FT	DENSITY POROSITY (2.71g/cc) PERCENT	
150 0	300 150		70 30 -10	30 -10 -50
TENSION LBS			NEUTRON POROSITY (LIMESTONE) PERCENT	
10000	0		70 30	30 -10
DENSITY (X) CALIPER INCHES (IN)			COMPENSATED BULK DENSITY G/CC	
16 6	26 16		3.0 2.0 1.0	4.0 3.0 2.0
NEUTRON (Y) CALIPER INCHES (IN)		PE CROSS-SECTION BARN/ ELECTRON		DENSITY CORRECTION G/CC
16 6	26 16	0	20	-0.75 0.25
BIT SIZE INCHES (IN)				
6	16			

* Borehole Zone Factors *

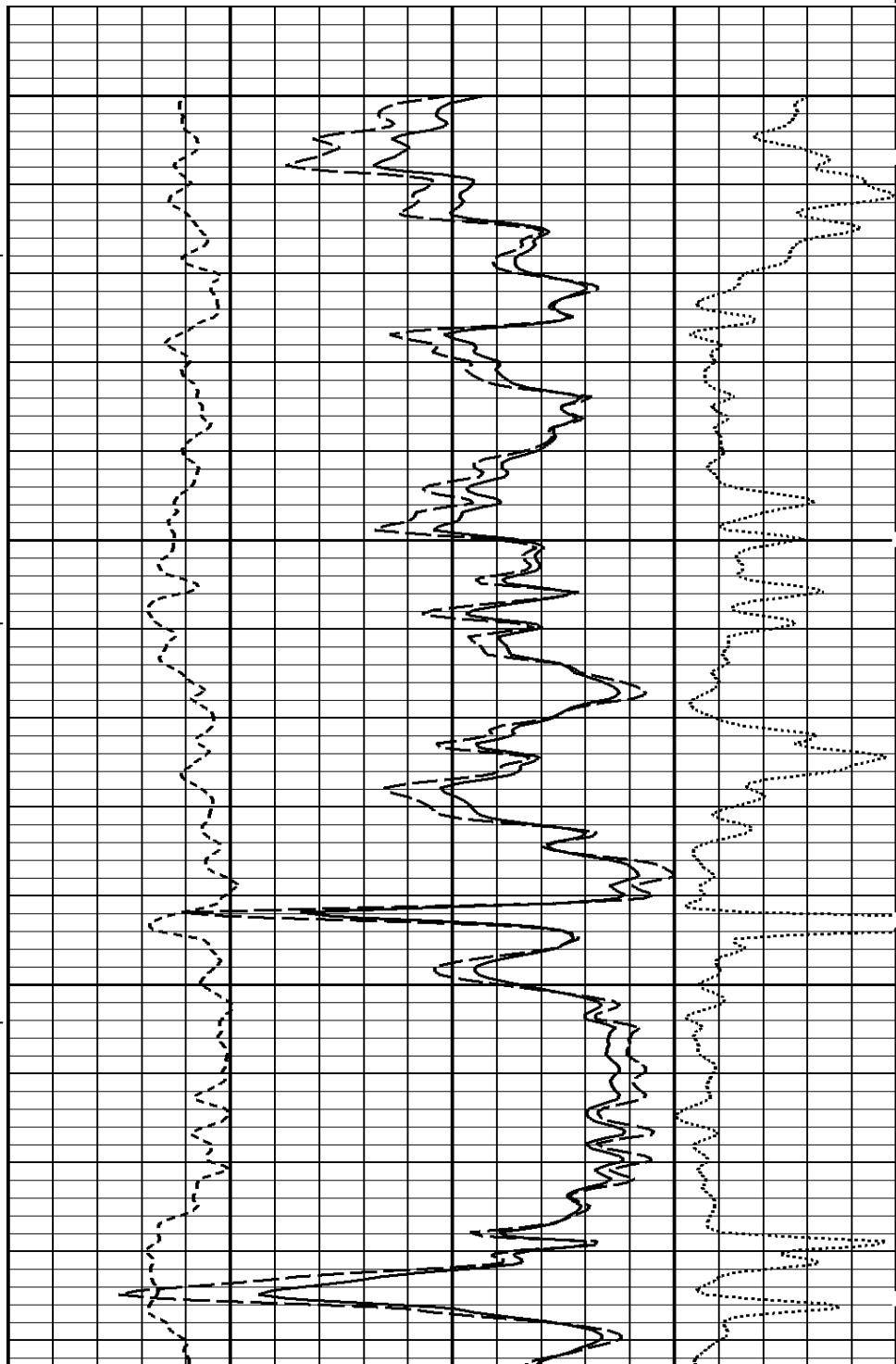
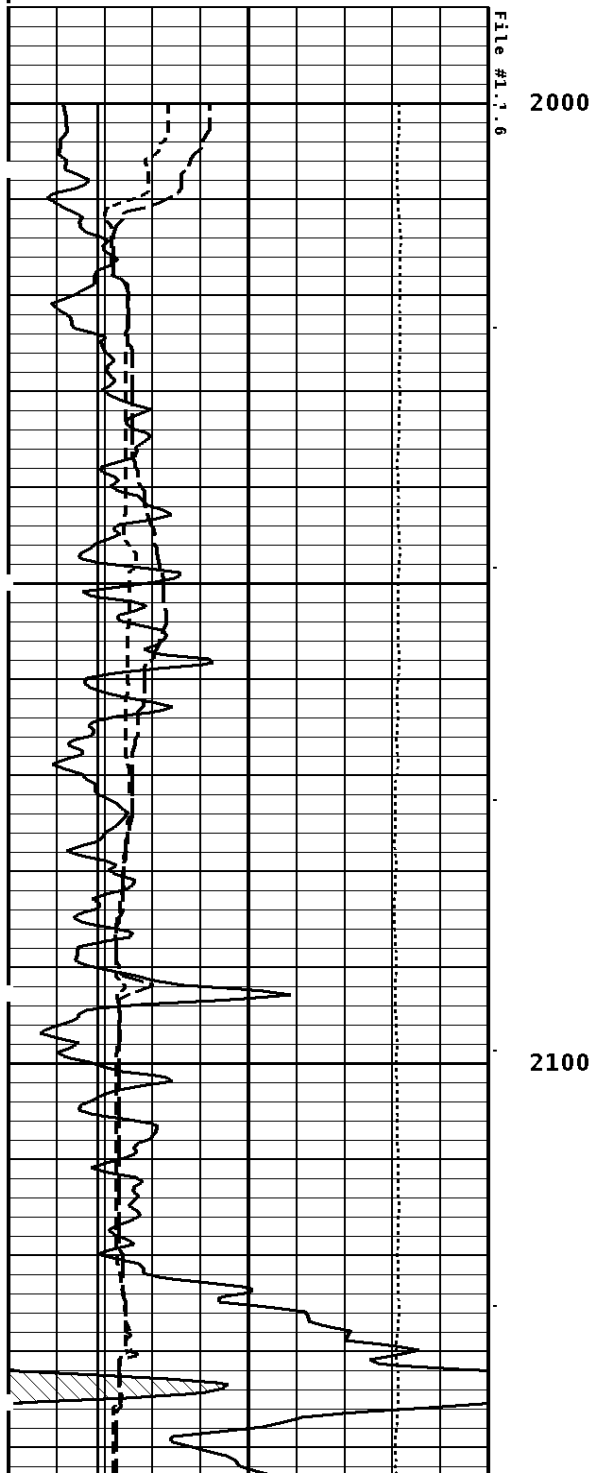
Zone 1		99999.0	to	0.0	Feet
Fluid Density		1.00	g/cc		
Drill Bit Size		7.875	in		
Casing Diameter		5.500	in		
Casing Thickness		0.250	in		
Casing Correction (PHI N)		Disable			

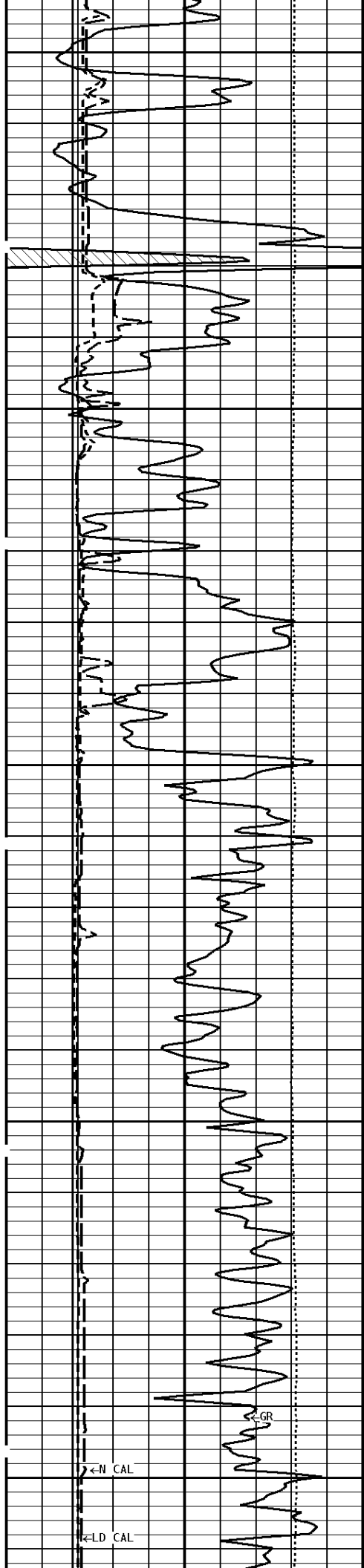
Well File: AND HAY 1 FEB 1 QUINT	Scale: 1:240
Segment: V1.D1.S6 MAIN	Acquired: 2013-02/01 05:49 3.2.0-11401
Reference: 0	Processed: 2013-02/01 07:48 3.2.0-11401

BIT SIZE INCHES (IN) 6 16	
NEUTRON (Y) CALIPER INCHES (IN) 16 26 6 16	

DENSITY (X) CALIPER INCHES (IN)		PE CROSS-SECTION BARN/ ELECTRON		DENSITY CORRECTION G/CC	
16	26	0	10	-0.25	0.25
6	16				
TENSION LBS		COMPENSATED BULK DENSITY G/CC			
10000	0	3.0	4.0		
		2.0	3.0		
		1.0	2.0		
GAMMA RAY API UNITS		DENSITY POROSITY (2.71g/cc) PERCENT			
150	300	70	30		
0	150	30	-10		
		-10	-50		

1:240 MAIN SECTION
BULK DENSITY





600Cu.Ft

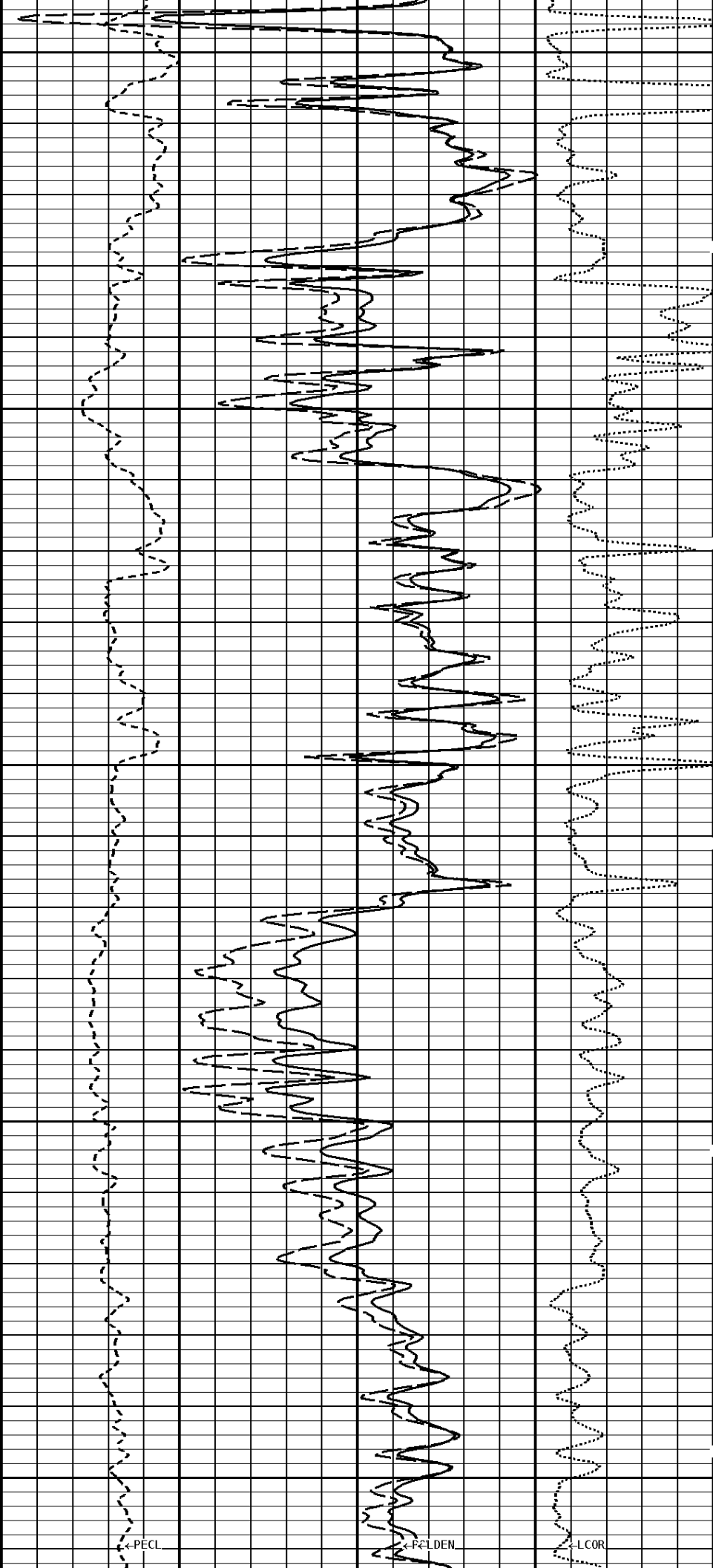
2200

300Cu.Ft

2300

<N CAL

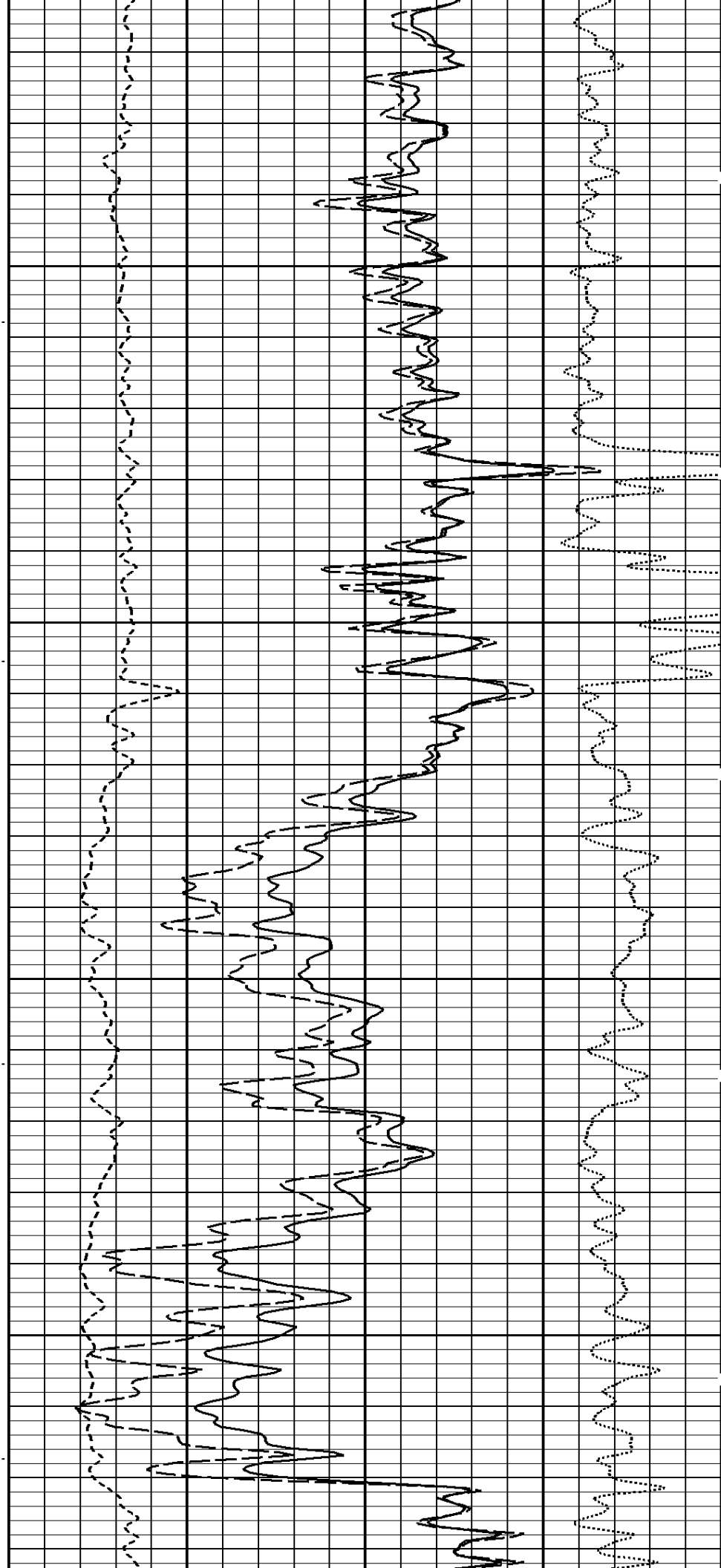
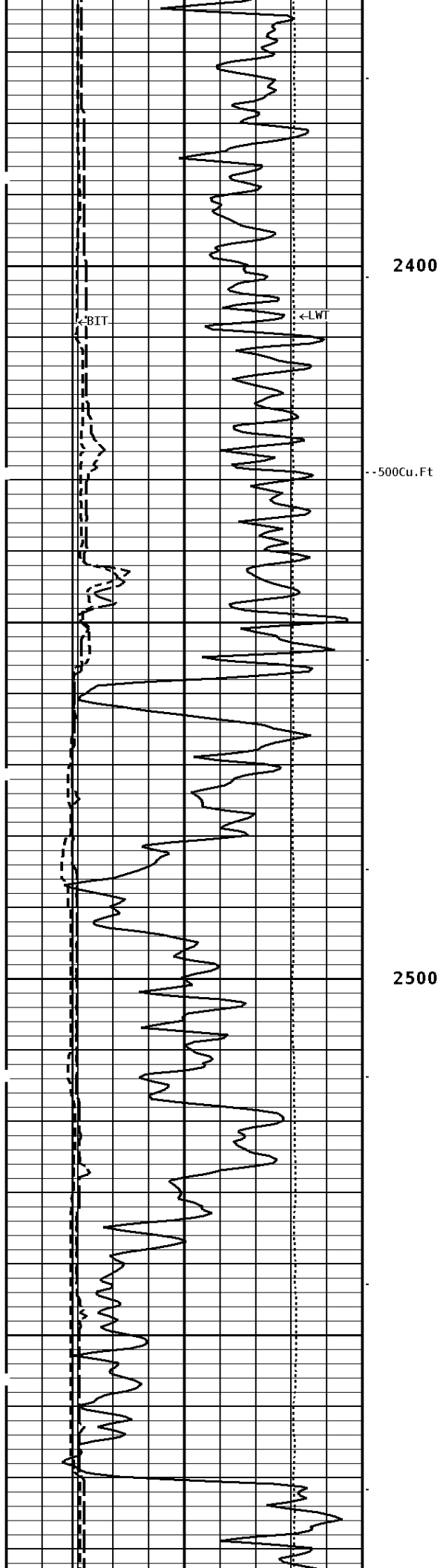
<ELD CAL

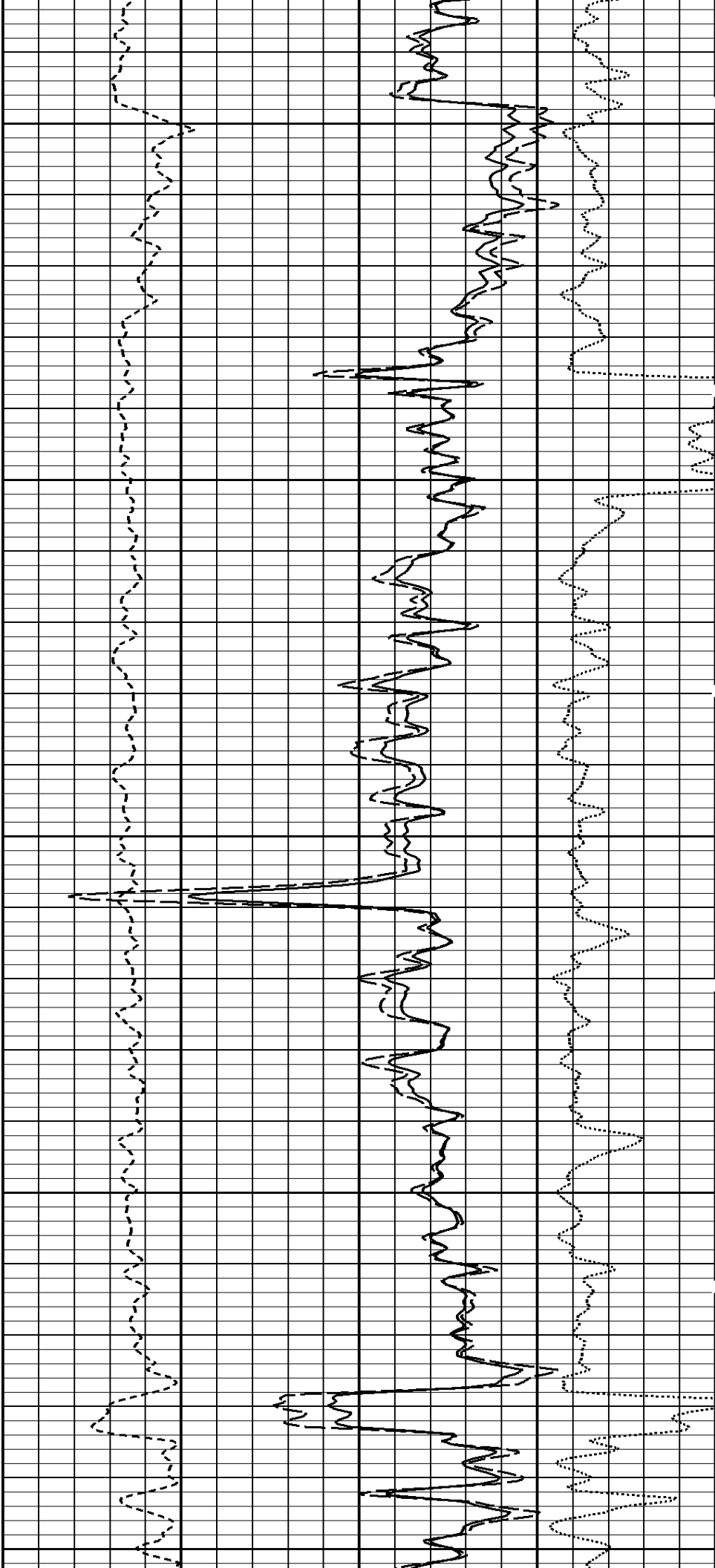
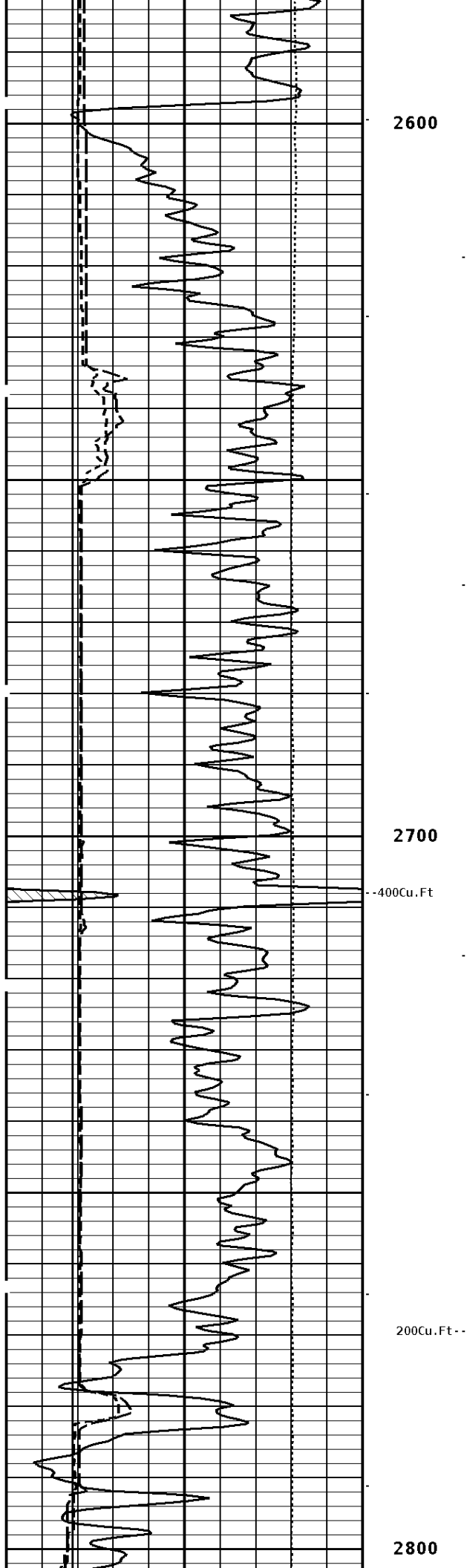


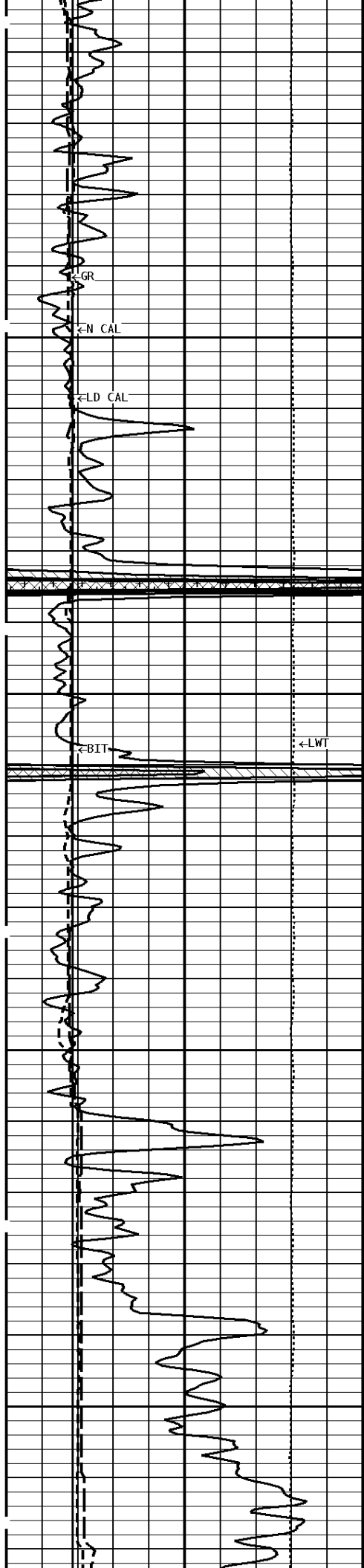
PECL

FELDEN

LCOR

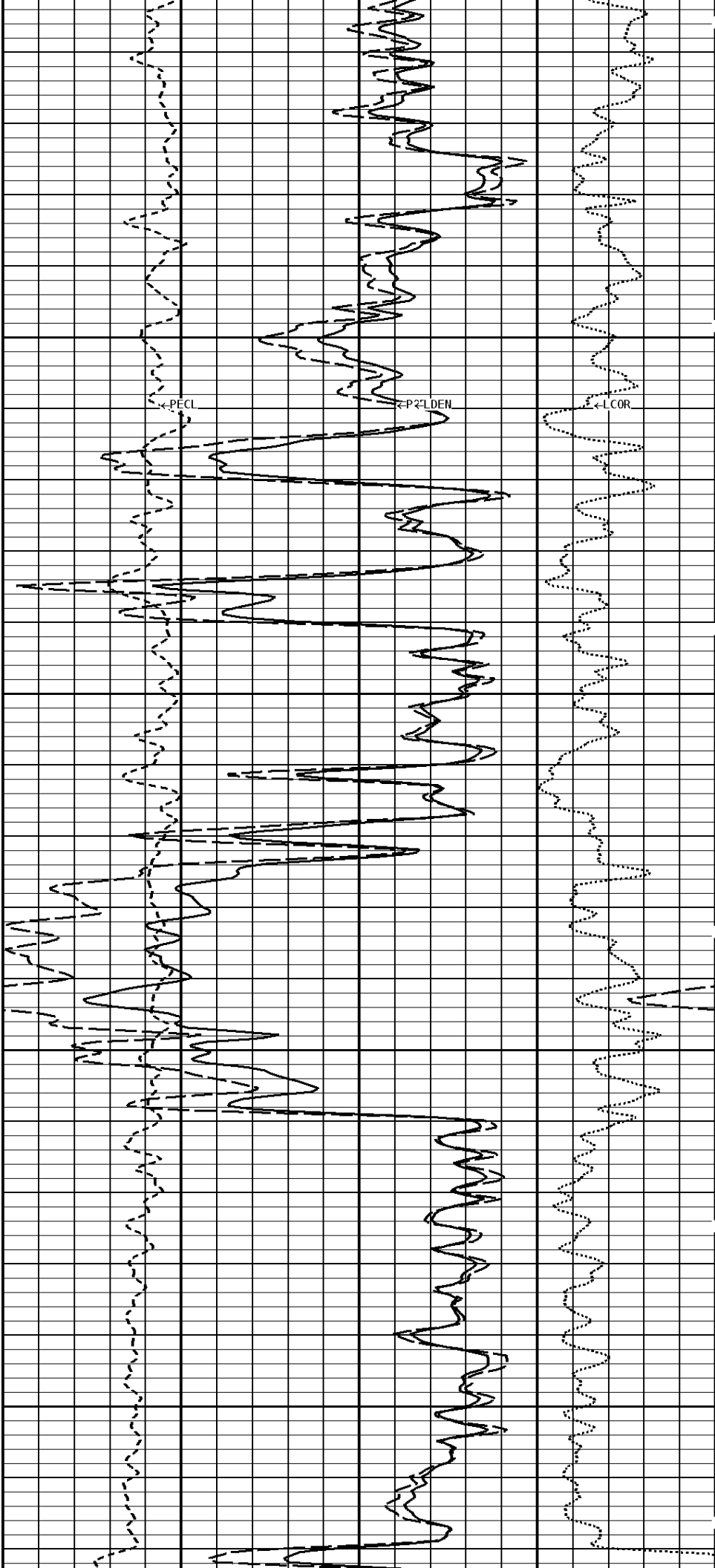






2900

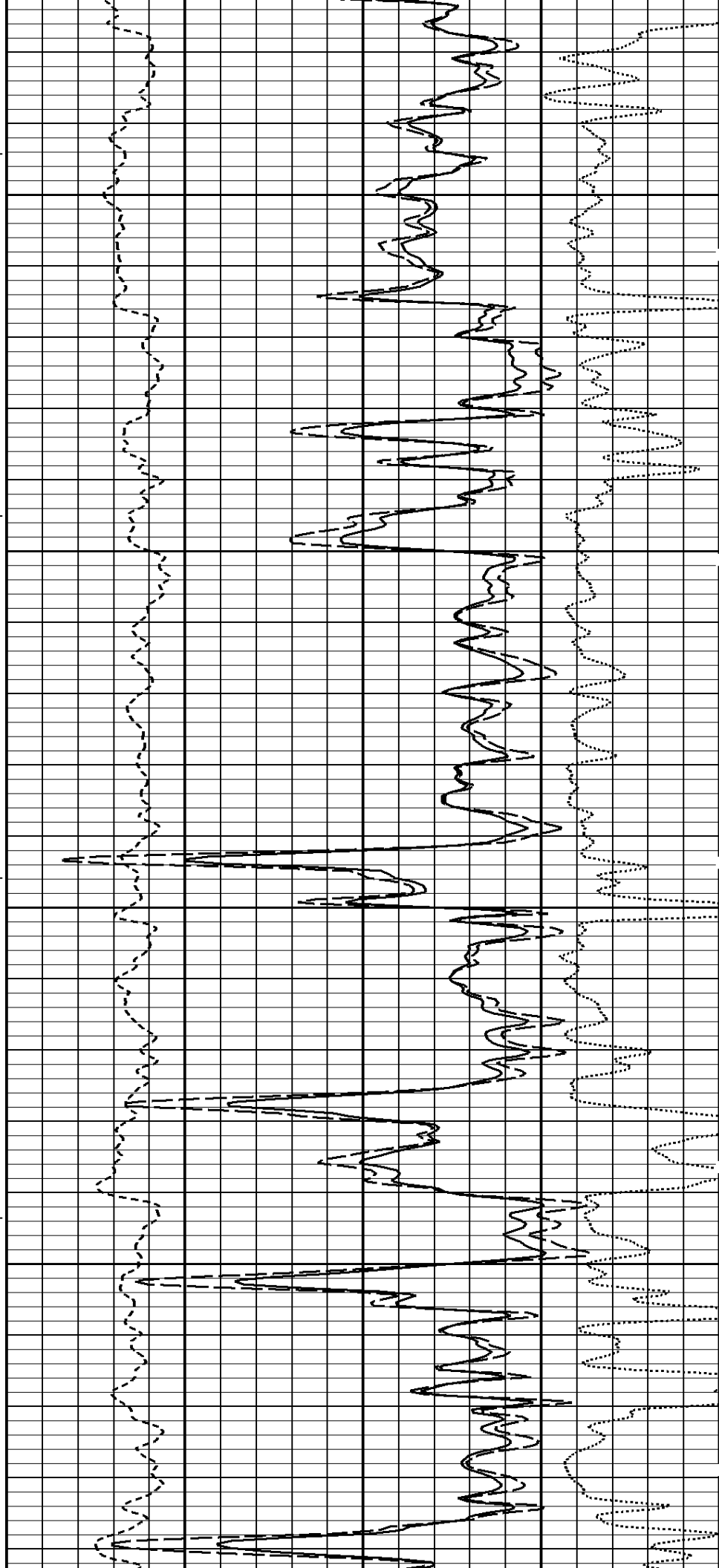
--300Cu.Ft
3000

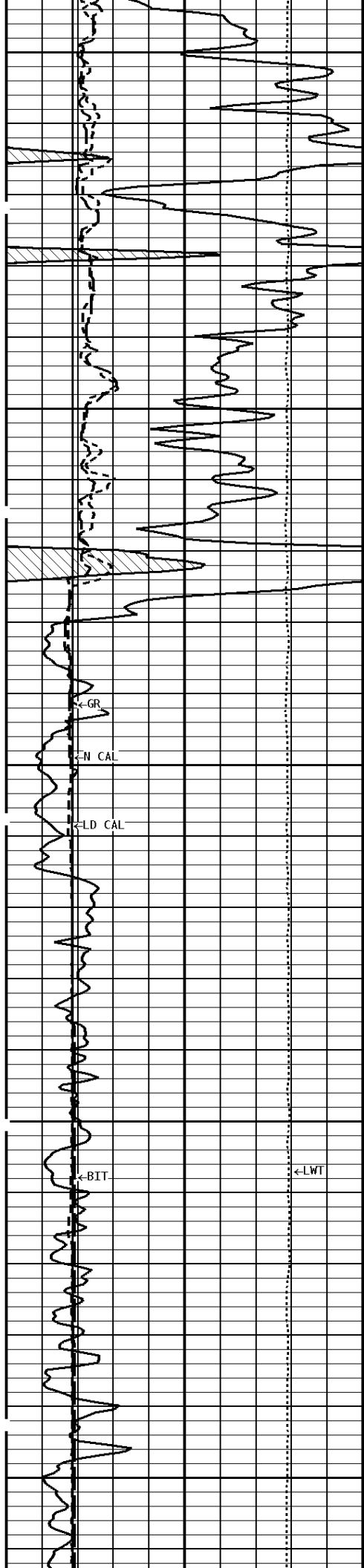




3100

3200



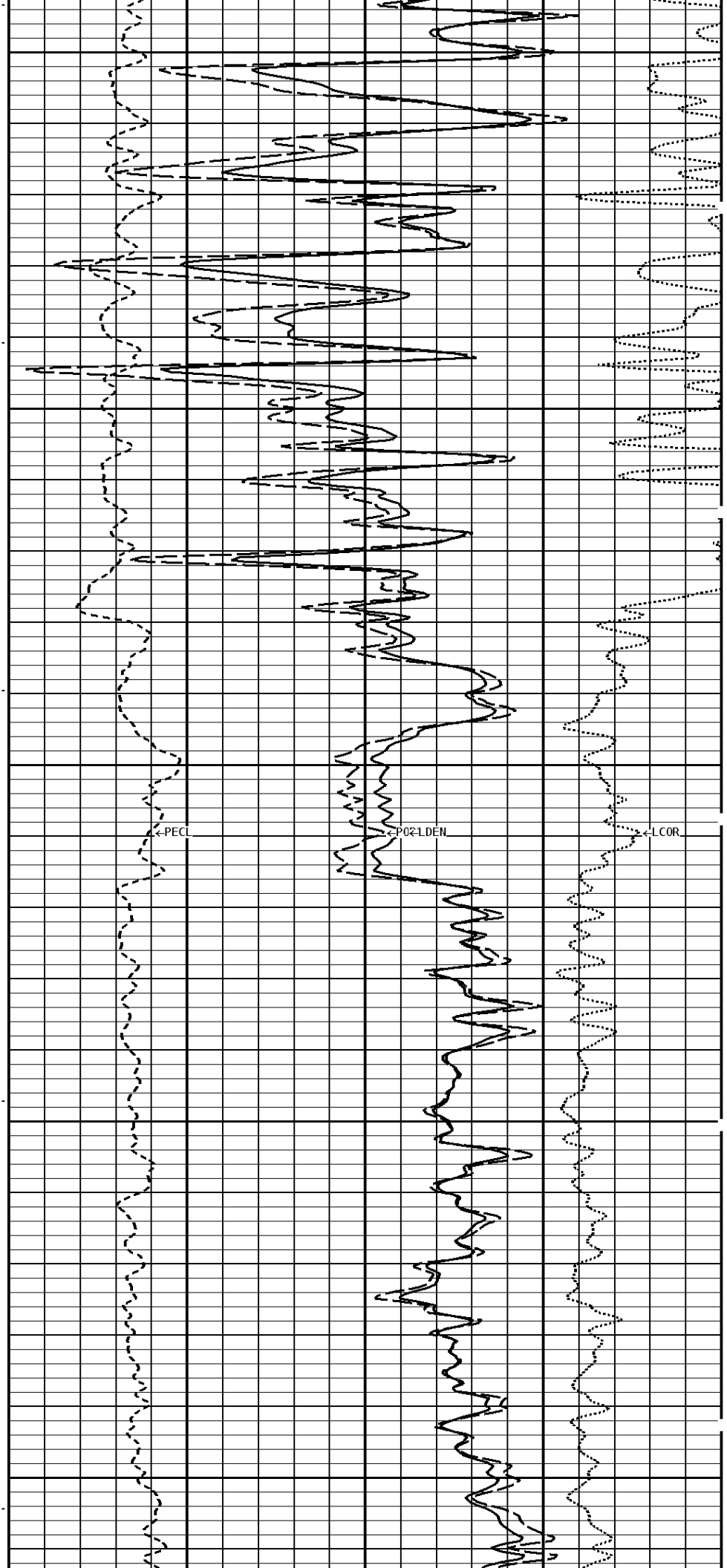


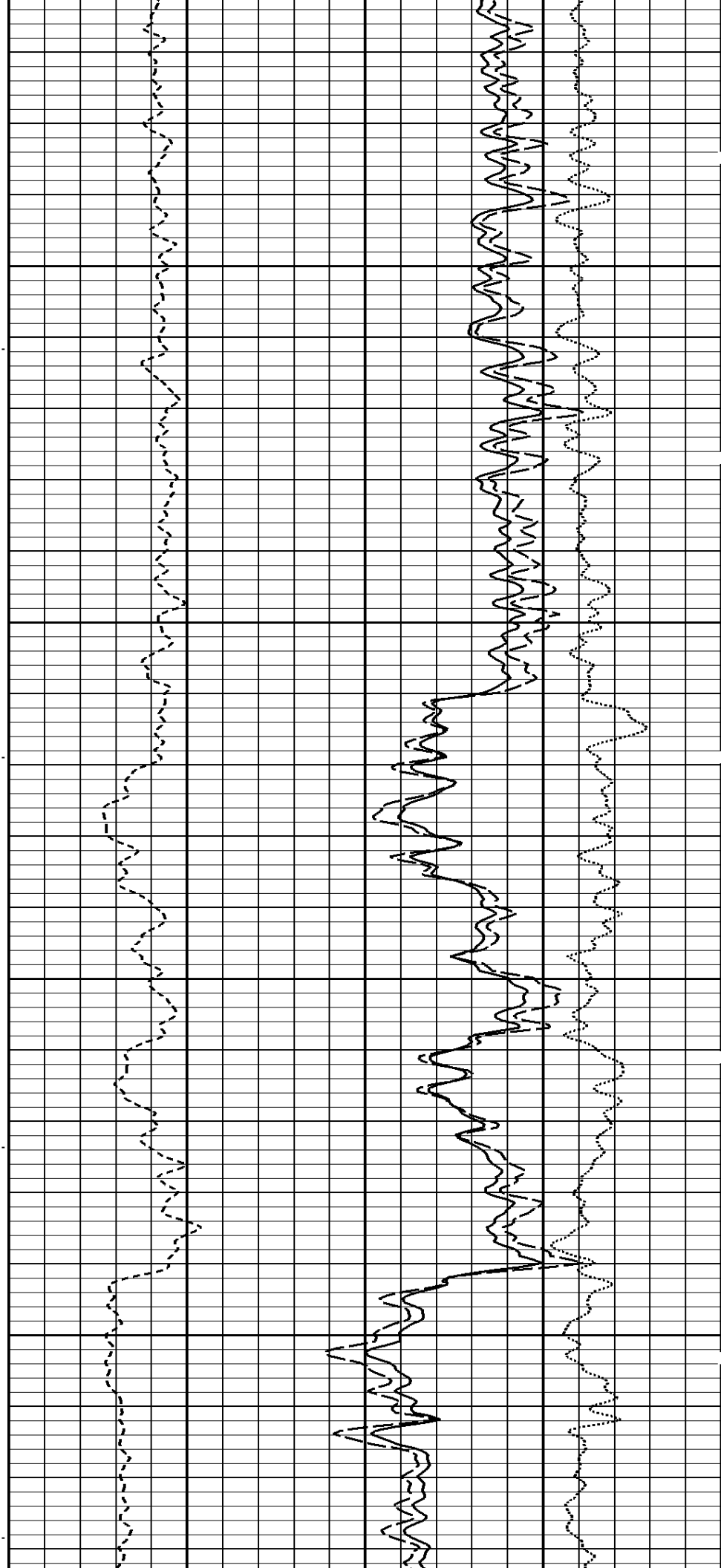
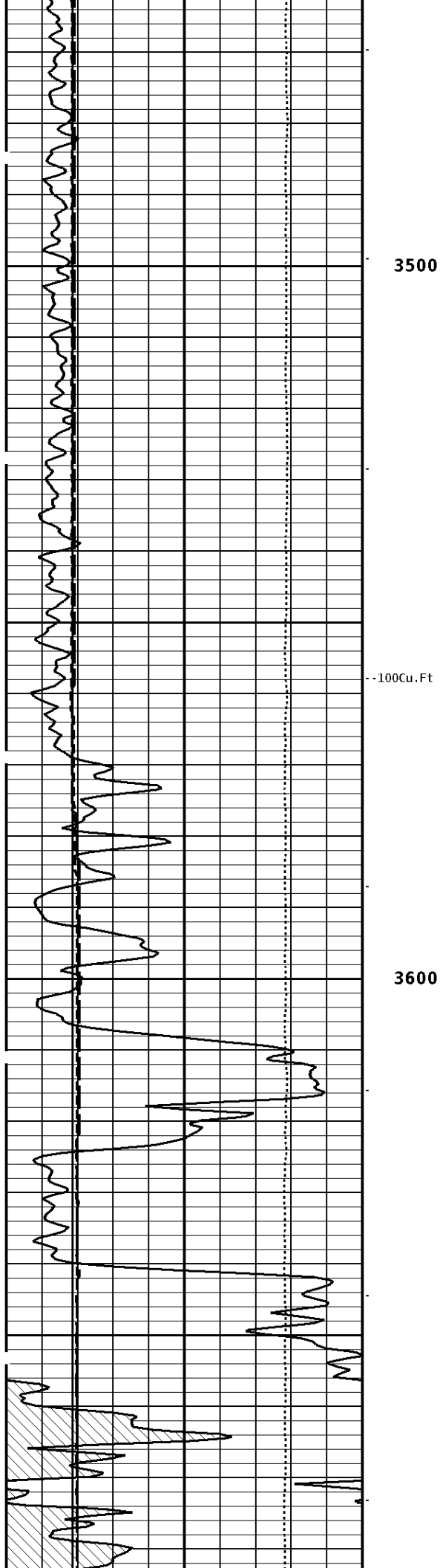
--200Cu.Ft--

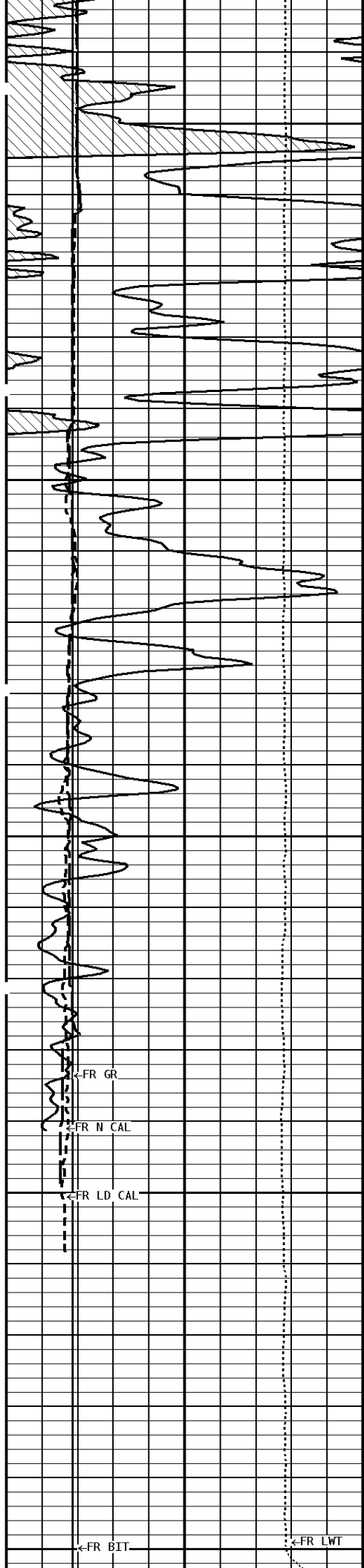
100Cu.Ft--

3300

3400



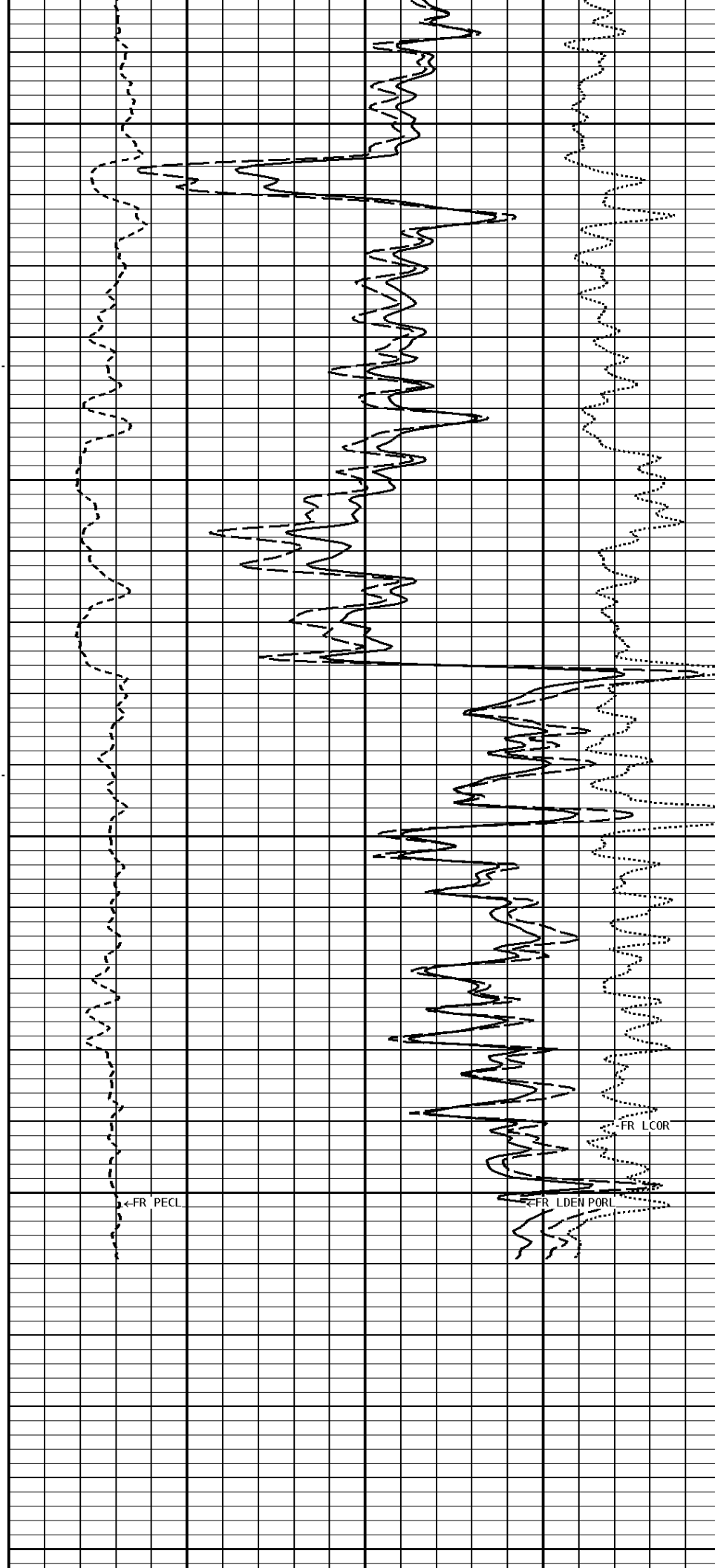




3700

3800

3900



←FR PECL

←FR LCOR

←FR LDEN PORL

←FR GR

←FR N CAL

←FR LD CAL

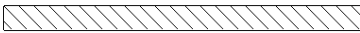
←FR BIT

←FR LWT

File #1.1.6

1:240 MAIN SECTION

BULK DENSITY

GAMMA RAY API UNITS 150  300 0 150		- BHV AHV - CU. FT		DENSITY POROSITY (2.71g/cc) PERCENT 70 30 30 -10 -10 -50	
TENSION LBS 10000 0		COMPENSATED BULK DENSITY G/CC 3.0 4.0 2.0 3.0 1.0 2.0			
DENSITY (X) CALIPER INCHES (IN) 16 26 6 16		PE CROSS-SECTION BARN/ ELECTRON 0 10		DENSITY CORRECTION G/CC -0.25 0.25	
NEUTRON (Y) CALIPER INCHES (IN) 16 26 6 16					
BIT SIZE INCHES (IN) 6 16					

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet			
Matrix Density	_____	2.71	g/cc
Fluid Density	_____	1.00	g/cc
Formation Matrix	_____	Limestone	
Drill Bit Size	_____	7.875	in
Casing Diameter	_____	5.500	in
Casing Correction (PHI N)	_____	Disable	

* Calibration Summary *

Shop Calibration					
GRT-B					
Performed : 04-SEP-2012			Time : 19:28		
Sensor Suite : GR-GR5			ID : GRT-BC-41		
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig		
	46	346	175	GRAPI	
Shop Calibration					
CNT-AA					
Performed : 23-Jan-2013			Time : 11:28		
Sensor Suite : CALI-BCN			ID : NDT-BB-123		
Jig - Measured Jig - Calibrated Units					

CL # 1	Ring#1 6.8	Ring#2 11.6	Ring#1 6.0	Ring#2 12.0	IN.
Performed : 23-Jan-2013 Sensor Suite : BHC NEUT Source ID : N-1045			Time : 10:57 ID : CNP-AA-024		
	Tank		Verification		Units
	Measured	Calibrated	Jig		
N/F	3.8958	3.6893	3.6946		
Porosity	23.8	20.5	20.6		%
Shop Calibration LDT-DF					
Performed : 28-Jan-2013 Sensor Suite : CALI-LTH			Time : 12:16 ID : PDT-GA-466		
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	6.8	10.2	6.0	12.0	IN.
Performed : 28-Jan-2013 Sensor Suite : BHCPELNG Source ID : 2991GW			Time : 11:52 ID : LDP-DA-066		
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	69	1045	1706	691	CPS
LSW2	69	1215	1955	899	CPS
LSW3	260	2798	4501	2418	CPS
LSW4	324	2623	3742	2340	CPS
LSW5	30	62	68	57	CPS
LSW6	86	91	91	91	CPS
LSW7	54	59	59	59	CPS
LSW8	2	4	6	4	CPS
QS	0.229	0.214	0.219	0.213	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	134	1185	4823	727	CPS
LLW2	177	2152	8379	1568	CPS
LLW3	539	3934	14831	3408	CPS
LLW4	584	1936	6099	1761	CPS
LLW5	67	72	133	71	CPS
LLW6	173	169	159	173	CPS
LLW7	114	106	106	108	CPS
LLW8	3	7	18	6	CPS
QL	0.206	0.230	0.203	0.232	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC
Shop Calibration MST-DA					
Performed : 01-OCT-2012 Sensor Suite : CALI-MSN			Time : 10:58 ID : MST-DA-36		
	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	7.0	11.8	6.0	12.0	IN.
Performed : 01-OCT-2012 Sensor Suite : MSTDA-NI			Time : 09:18 ID : MST-DA-36		
Internal					
	Measured		Calibrated		Units
	Zero	Reference	Zero	Reference	
INV-V	221.0	21282.7	0.00	1946.00	MV
NOR-V	164.0	21140.6	0.00	1546.00	MV
IN-C	157.3	21367.2	0.00	15.46	UA
INV-R				40.71	OHMM
NOR-R				55.11	OHMM



Company: ANDERSON ENERGY, INC
Well: HAY #1
Location: 2310' FNL & 2240' FEL
Logged: 2013-02-01
K.B. Elev: 1291.0 Ft

--	--