

Tucker
WIRELINE SERVICES

COMPENSATED NEUTRON

PEL DENSITY LOG

Company: RUNNING FOXES PETROLEUM
Well: DICKERSON #10-22C-2
Field: BRONSON-XENIA
Country: ALLEN
State: KANSAS
Country: USA
API No.: 15-001-30364

File No.: TUL-57573
Company: RUNNING FOXES PETROLEUM
Well: DICKERSON #10-22C-2
Field: BRONSON-XENIA
Country: ALLEN
State: KANSAS
Country: USA
API No.: 15-001-30364

Location:
1815' FSL & 2474' FEL
NW SW NW SE

LSD: Sect: 22 Twp: 24S Rge: 21E

Permanent Datum: GL Elevations: KB 0.00 Ft CNT
Drilling Measured From: GL DF 0.00 Ft LDT
Log Measured From: GL GL 1106.00 Ft PIT
Above Permanent Datum: 0.00 Ft

Date	04-25-2012	
Run Number	1	
Depth--Driller	965.0	Ft
Depth--Logger	965.0	Ft
First Reading	842.0	Ft
Last Reading	20.0	Ft
Casing--Driller	20.0	Ft
Casing--Logger	20.0	Ft
Bit Size	6.750	In
Casing Size	8.625	In
Hole Fluid Type	FRESH	
Density	0.0 LBS/GAL	
Fluid Loss	0.0 CC	
PH/Viscosity	0.0 @ 0.0 SEC	
Sample Source	MEASURED	
RM@Measured Temp.	10.000 @ 78 F	
RMF@Measured Temp	8.500 @ 78 F	
RMG@Measured Temp.	11.500 @ 78 F	
Source RMF/RMG	CALCULATED/CALCULATED	
RM@BHT	0.000 @ 83 F	
Time Circulation Stopped	83	
Max Recorded Temp.	F	
Equipment/Base	123 TULSA	
Recorded By	S. DAVIS	
Witnessed By	C. COUNTS	

The customer is hereby warned that by providing the log data herein, T. W. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. W. 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. W. 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. W. 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)
6.750	965.00	8.625	30.00	20.00

Run Number	1	
Date	04-25-2012	
Date/Time On Bottom	04-25-2012 12:30	
Depth to Fluid	0.0	Ft
Salinity	0.000	PPM
RMF@BHT	0.000 @ 83	F
RMC@BHT	0.000 @ 83	F

Run Number 1

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST.
 GRT, CNT, LDT, AND PIT RUN IN COMBINATION.
 CALIPERS ORIENTED ON X-Y AXIS.
 2.17 G/CC USED TO CALCULATED POROSITY.
 ANNULAR HOLE VOLUME CALCULATED USING 4.50" PRODUCTION CASING.
 PHIN IS CALIPER CORRECTED.

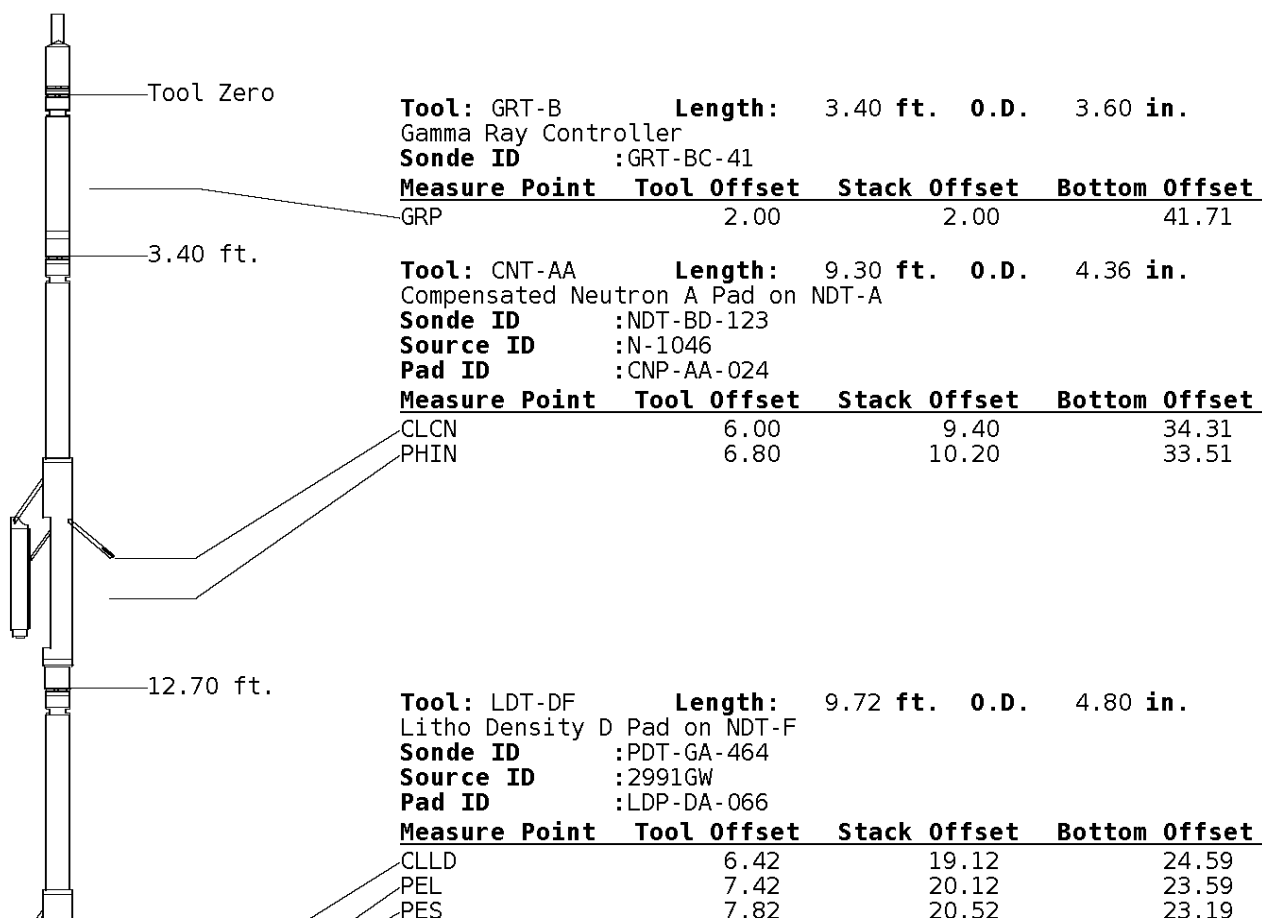
GRT: GRP.
 CNT: PHIN, CLCNIN.
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN.
 PIT: ILD, ILM, SPU, SFLAEC.

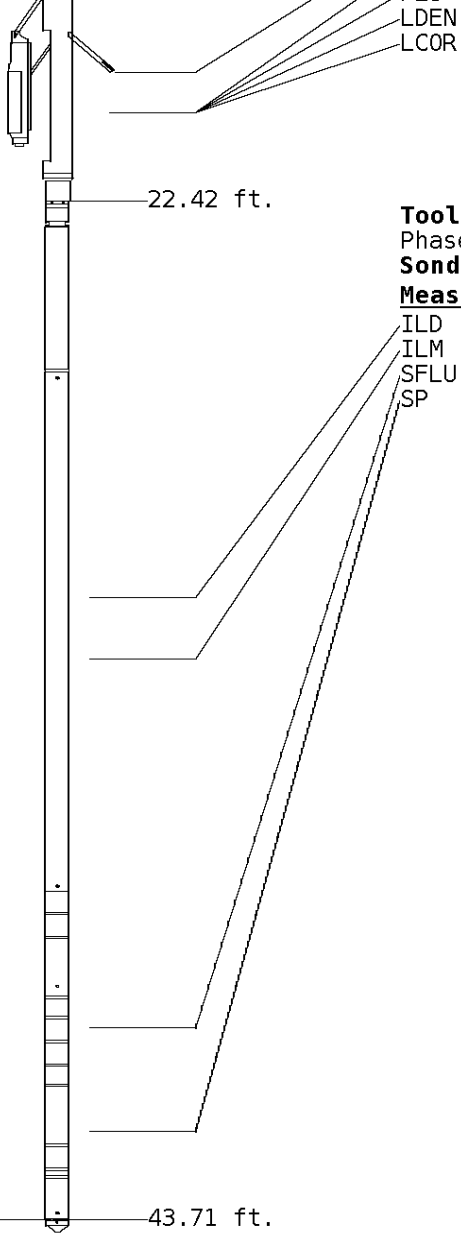
OPERATORS:

N. LOYD
 B. STEPHENS

Tool String Schematic

Total Tool Length - 43.71 ft.
Maximum Outside diameter - 4.80 in.
Net Weight in Air - 743.00 lbs.





7.62 20.32 23.39
 7.62 20.32 23.39

Tool: PIT-CA **Length:** 21.29 ft. **O.D.** 3.62 in.
 Phased Dual Induction
Sonde ID :PIT--AB-16

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.73	31.15	12.56
ILM	9.90	32.32	11.39
SFLU	17.29	39.71	4.00
SP	20.41	42.83	0.88

Well File: rfp-dick--10-22c-2-stk-apr-25

Scale: 1:240

Segment: V1.D1.S5 MN

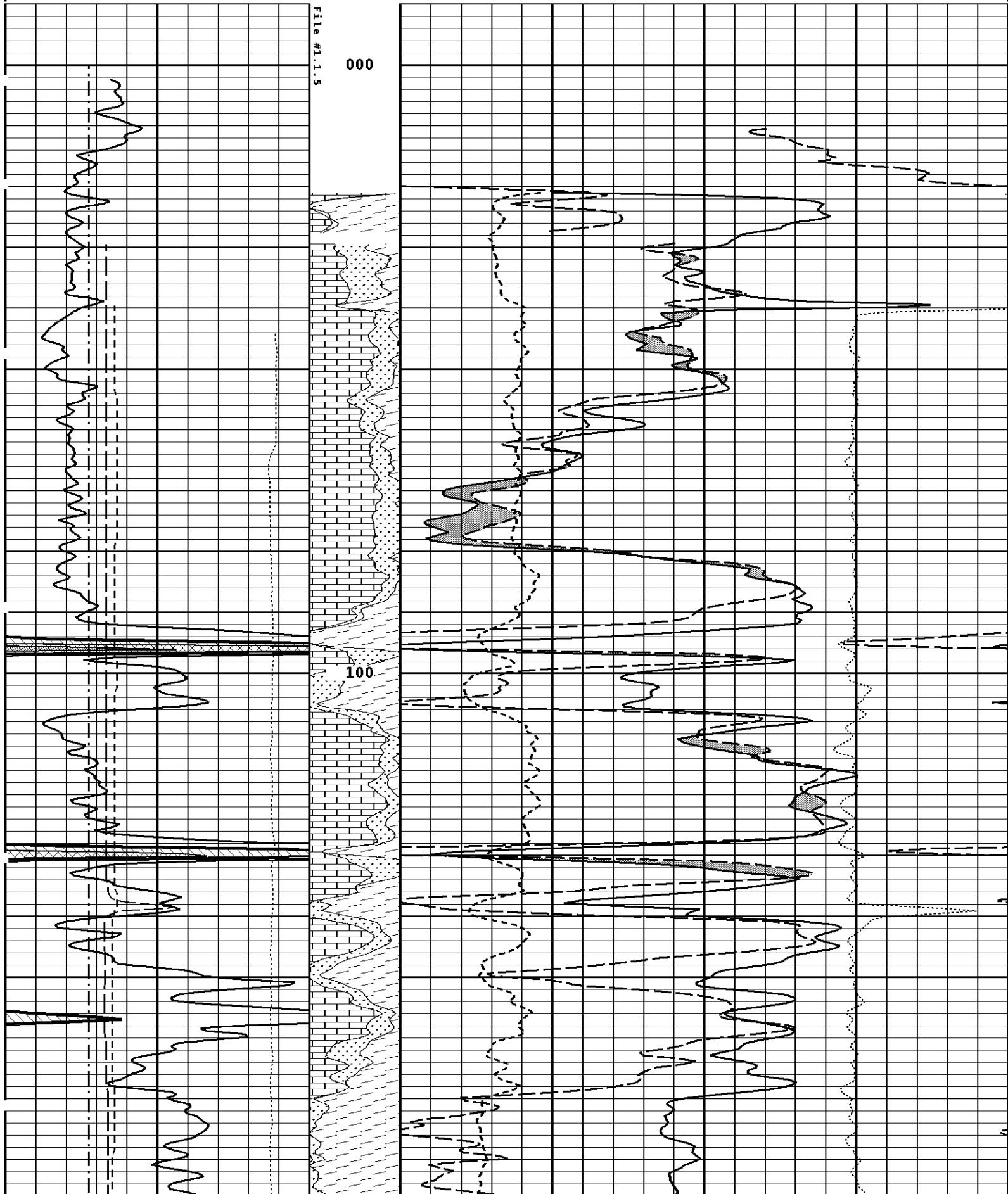
Acquired: 2012-04/25 12:39 3.2.0-10367

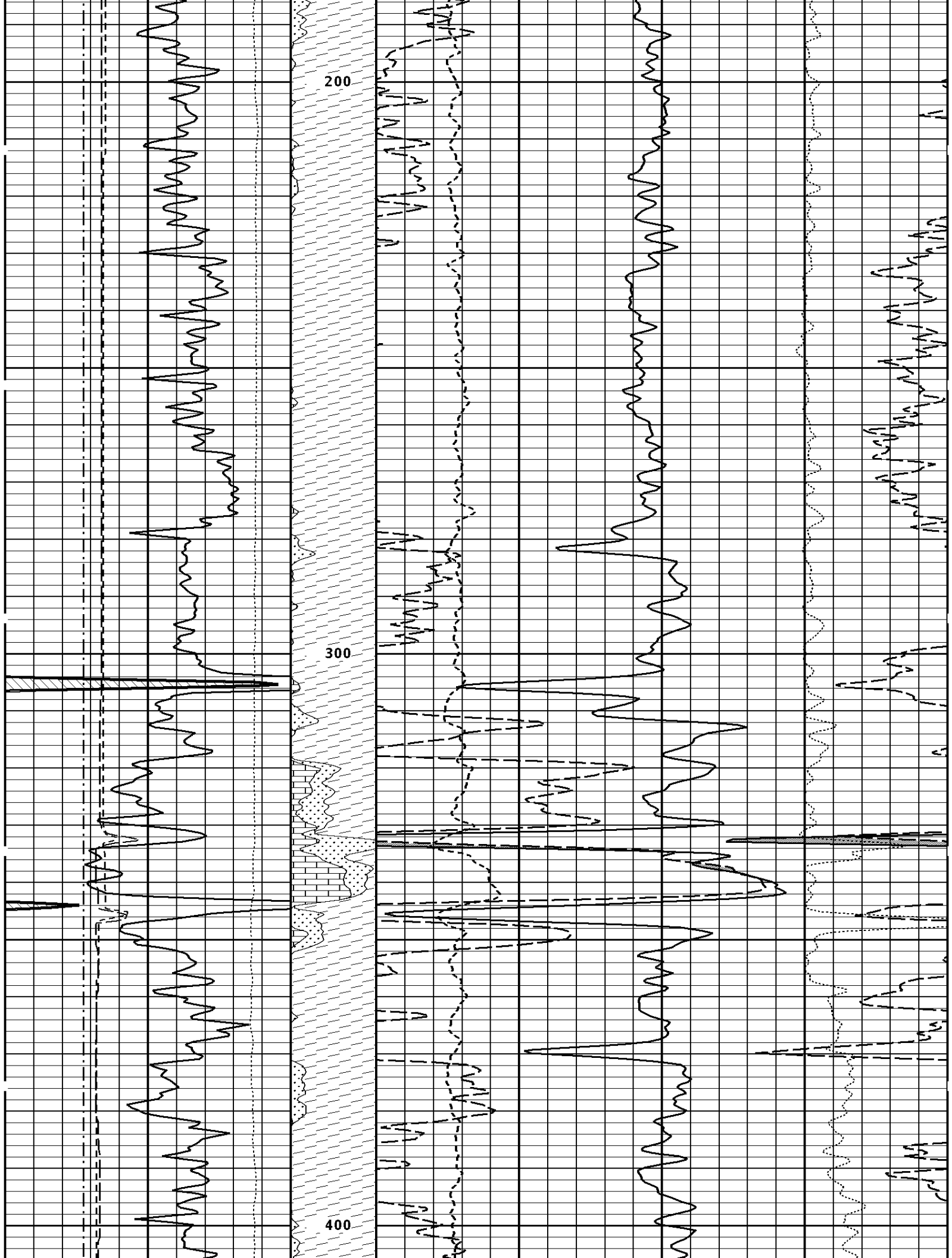
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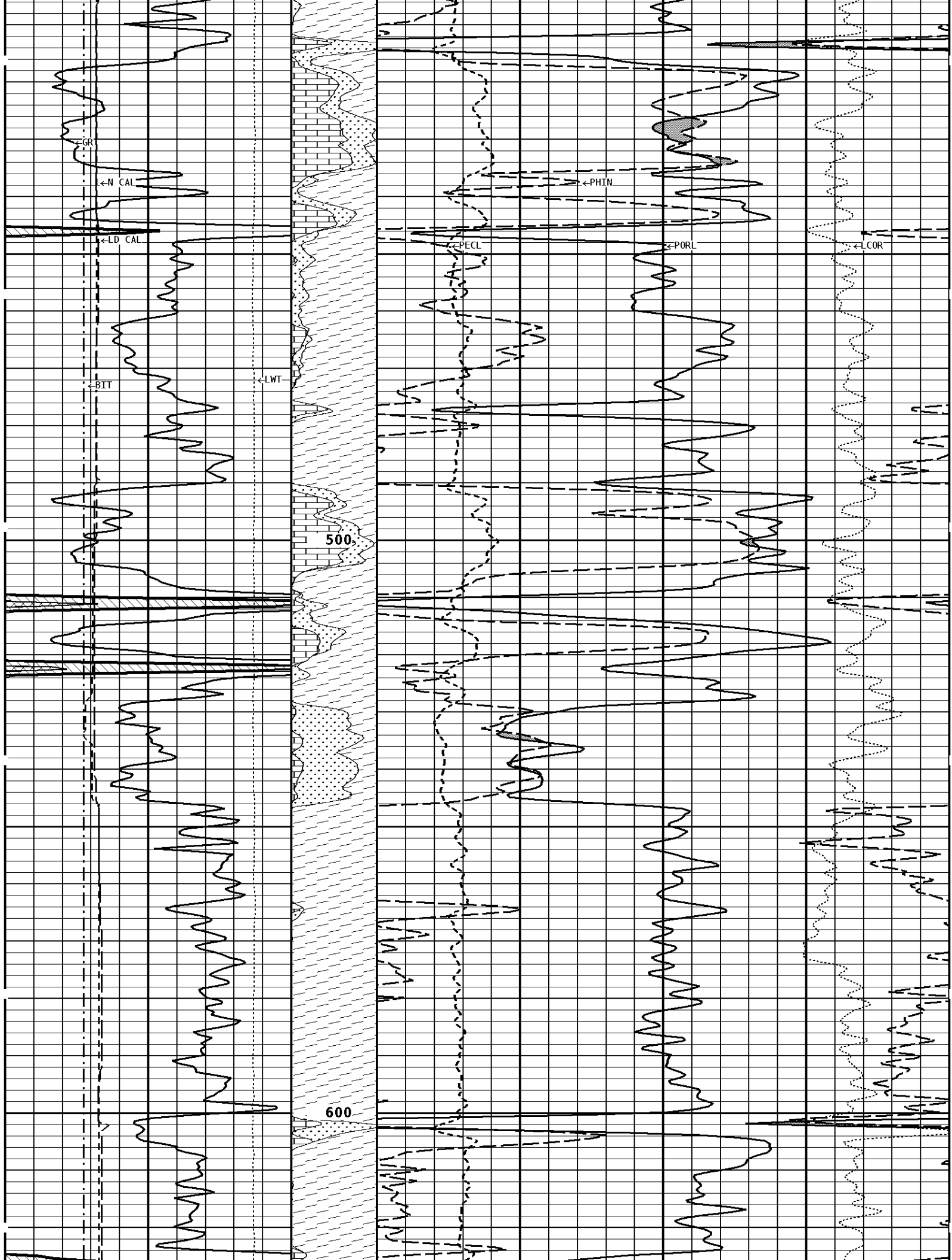
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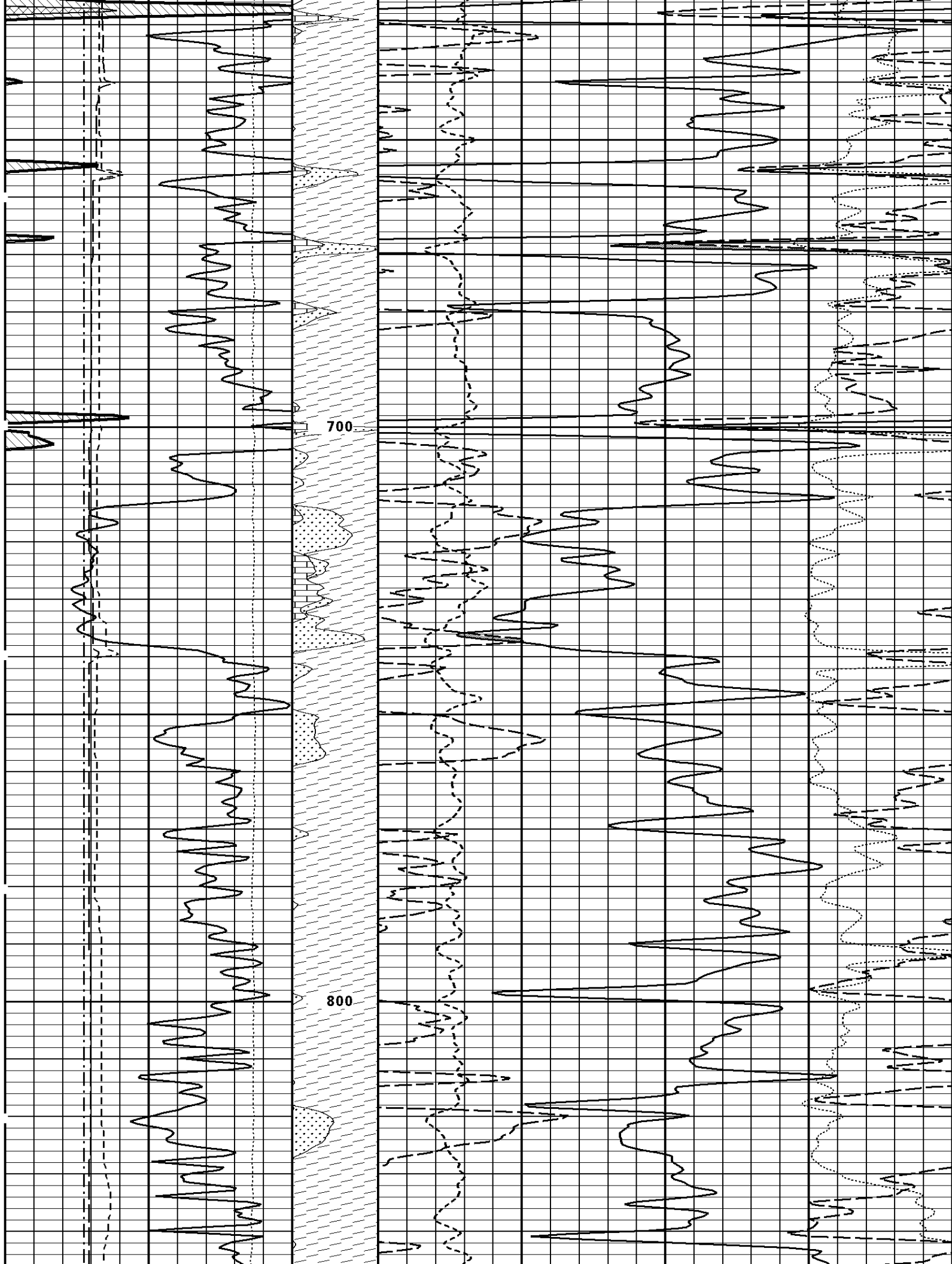
TENSION LBS					
10000	0				
BIT SIZE INCHES (IN)					
4	14				
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC	
14	24				
4	14	0	10	-0.25	0.25
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)		
14	24		70	30	
4	14		30	-10	
			-10	-50	
GAMMA RAY API UNITS		Volume Dolo/Shale	DENSITY POROSITY PERCENT (2.71 g/cc)		
200	400		70	30	
0	200		30	-10	
			-10	-50	

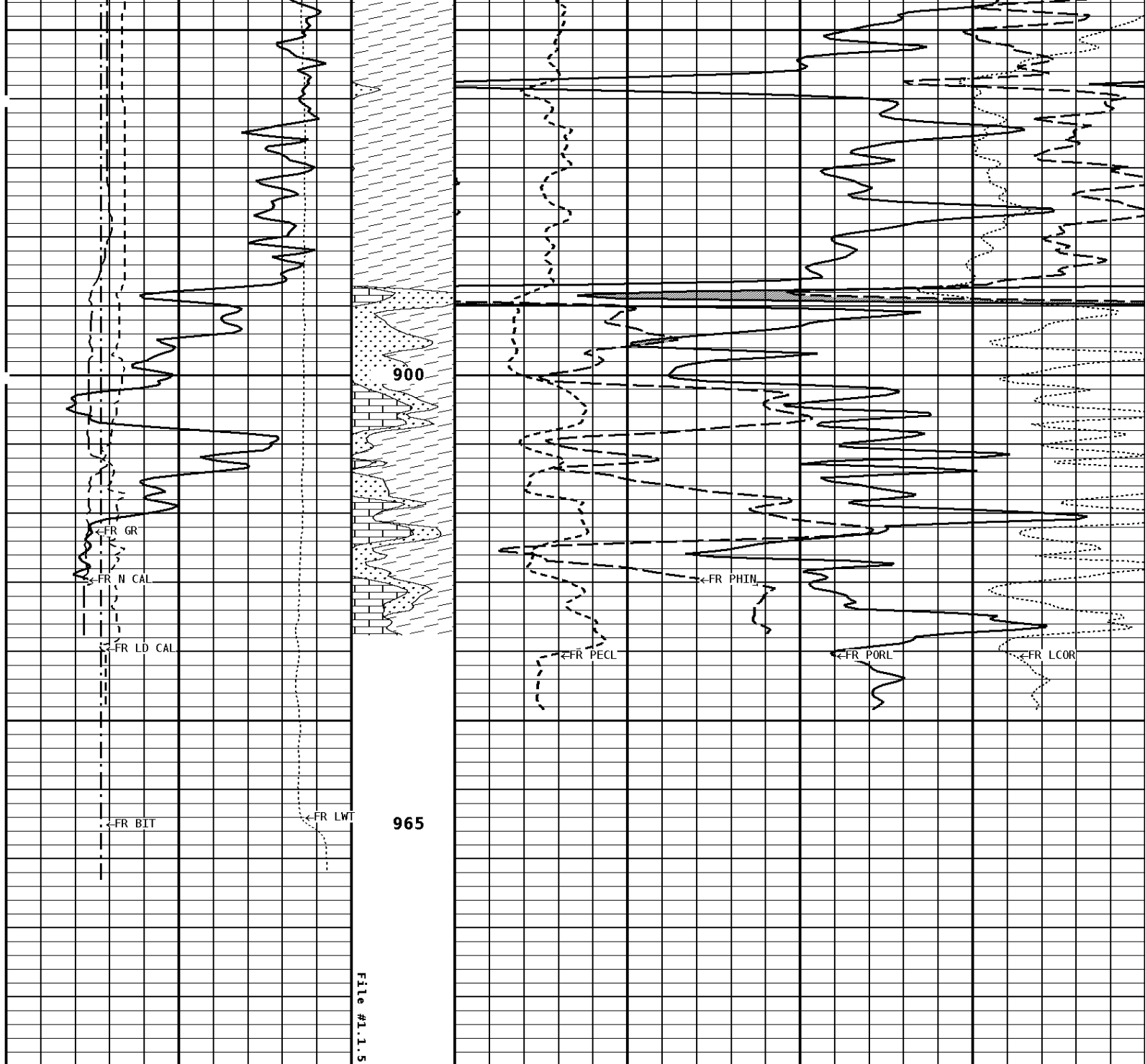
1:240 MAIN SECTION











1:240 MAIN SECTION

GAMMA RAY API UNITS 200 0 400 200		Volume Dolo/Shale 70 30 -10	DENSITY POROSITY PERCENT (2.71 g/cc) 30 -10 -50	
NEUTRON (Y) CALIPER INCHES (IN) 14 4 24 14		Volume Calcite 70 30 -10	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) 30 -10 -50	
DENSITY (X) CALIPER INCHES (IN) 14 4 24 14		Volume Quartz 0	PE CROSS-SECTION BARN/ELECTRON 10	DENSITY CORRECTION G/CC -0.25 0.25

BIT SIZE INCHES (IN)	
4	14
TENSION LBS	
10000	0

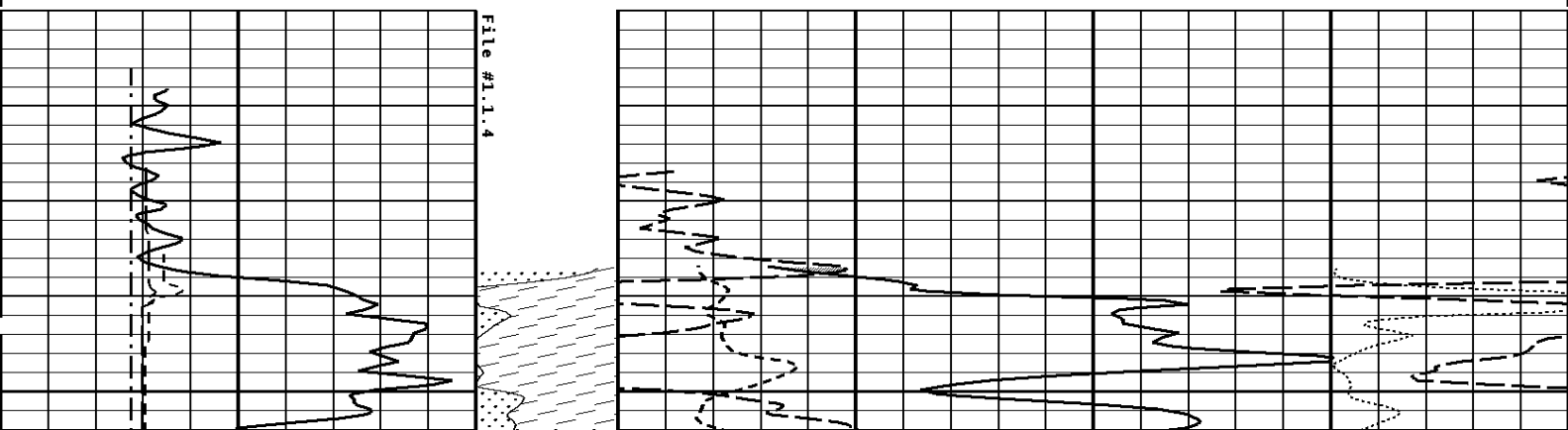
* Borehole Zone Factors *

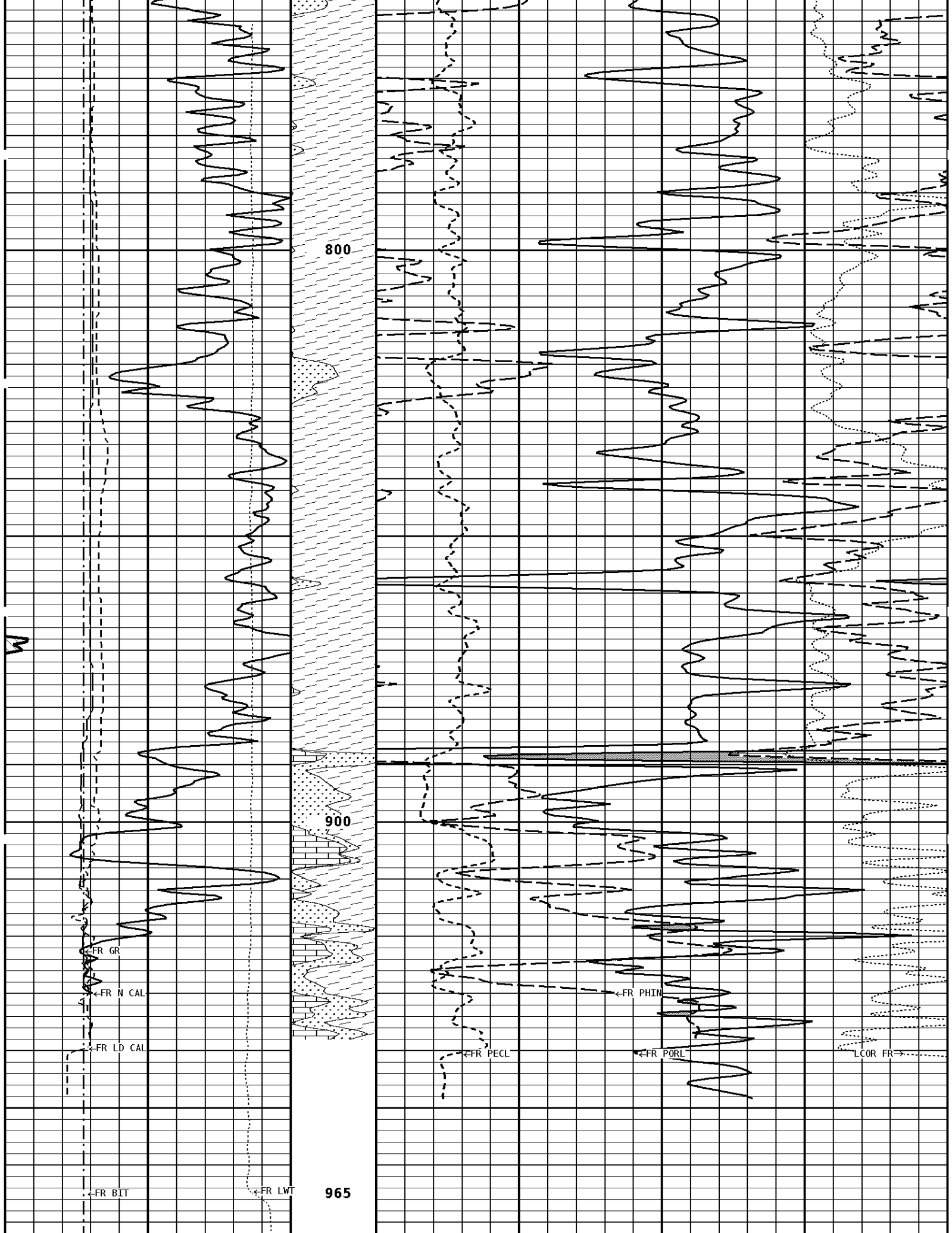
Zone 1 99999.0 to 0.0 Feet		
Matrix Density _____	2.71	g/cc
Fluid Density _____	1.00	g/cc
Formation Matrix _____	Limestone	
Drill Bit Size _____	6.750	in
Casing Diameter _____	4.500	in
Casing Correction (PHI N) _____	Disable	

Well File: rfp-dick--10-22c-2-stk-apr-25	Scale: 1:240
Segment: V1.D1.S4 RP	Acquired: 2012-04/25 12:27 3.2.0-10367
Reference: 0	Processed: 2012-04/25 13:07 3.2.0-10367

TENSION LBS			
10000	0		
BIT SIZE INCHES (IN)			
4	14		
DENSITY (X) CALIPER INCHES (IN)	Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC
14 4	24 14	0	10 -0.25 0.25
NEUTRON (Y) CALIPER INCHES (IN)	Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)	
14 4	24 14	70 30 -10	30 -10 -50
GAMMA RAY API UNITS	Volume Dolo/Shale	DENSITY POROSITY PERCENT (2.71 g/cc)	
200 0	400 200	70 30 -10	30 -10 -50

1:240 REPEAT SECTION





800

900

965

←FR GR

←FR N CAL

←FR LD CAL

←FR BIT

←FR LWT

←FR PECL

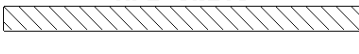


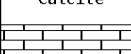

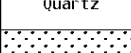


←FR PHIN

←FR PORL

←COR FR

File #1.1.4





1:240 REPEAT SECTION

GAMMA RAY API UNITS 	Volume Dolo/Shale 	DENSITY POROSITY PERCENT (2.71 g/cc)	
200 0	400 200	70 30 -10	30 -10 -50
NEUTRON (Y) CALIPER INCHES (IN) 	Volume Calcite 	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)	
14 4	24 14	70 30 -10	30 -10 -50
DENSITY (X) CALIPER INCHES (IN) 	Volume Quartz 	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
14 4	24 14	0 10	-0.25 0.25
BIT SIZE INCHES (IN) 			
4	14		
TENSION LBS 			
10000	0		

* 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 _____ 6.750 in Casing Diameter _____ 4.500 in Casing Correction (PHI N) _____ Disable

Well File: rfp-dick--10-22c-2-stk-apr-25	Scale: 1:240
Segment: V1.D1.S5 MN	Acquired: 2012-04/25 12:39 3.2.0-10367
Reference: 0	Processed: 2012-04/25 13:07 3.2.0-10367

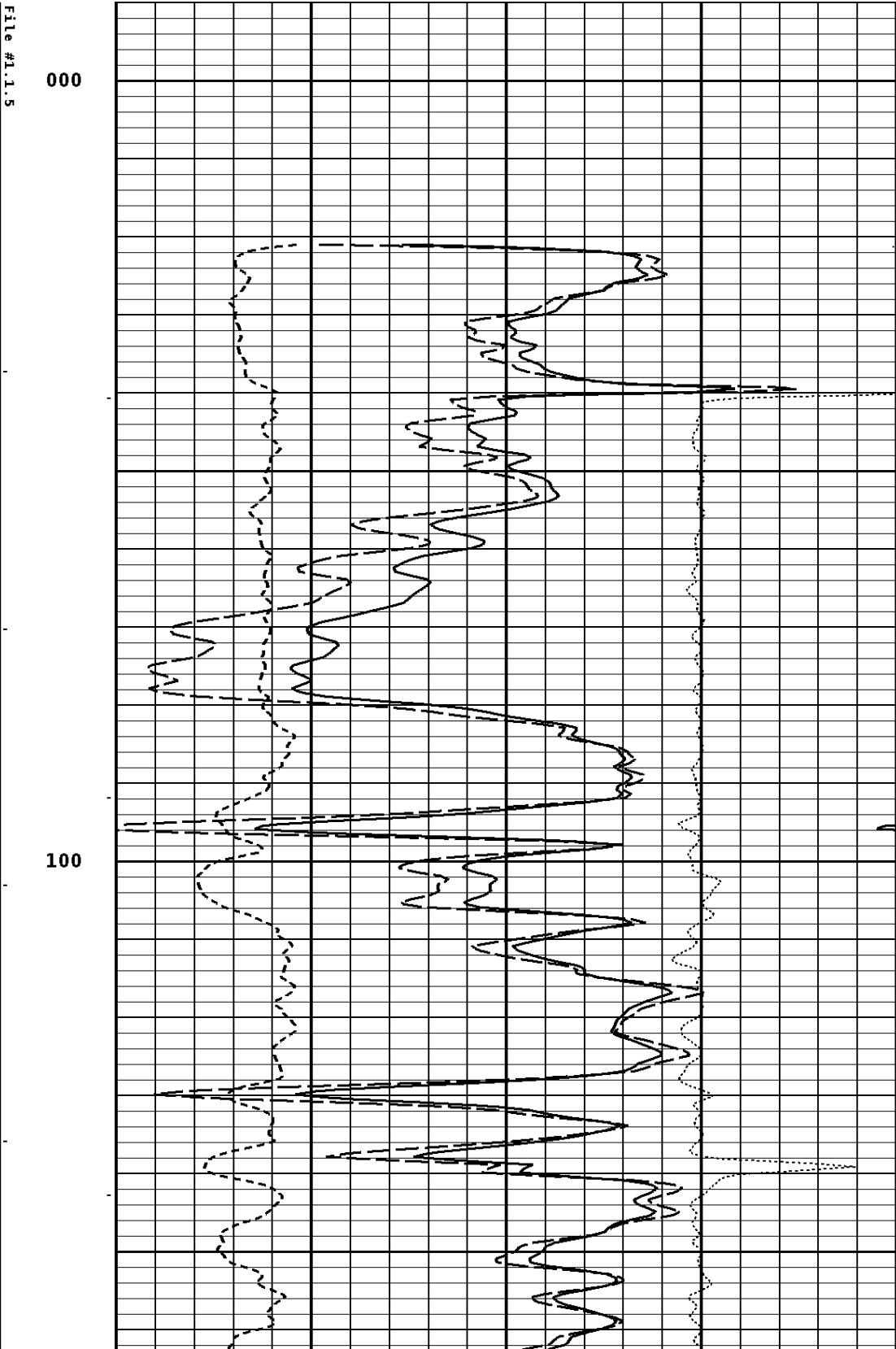
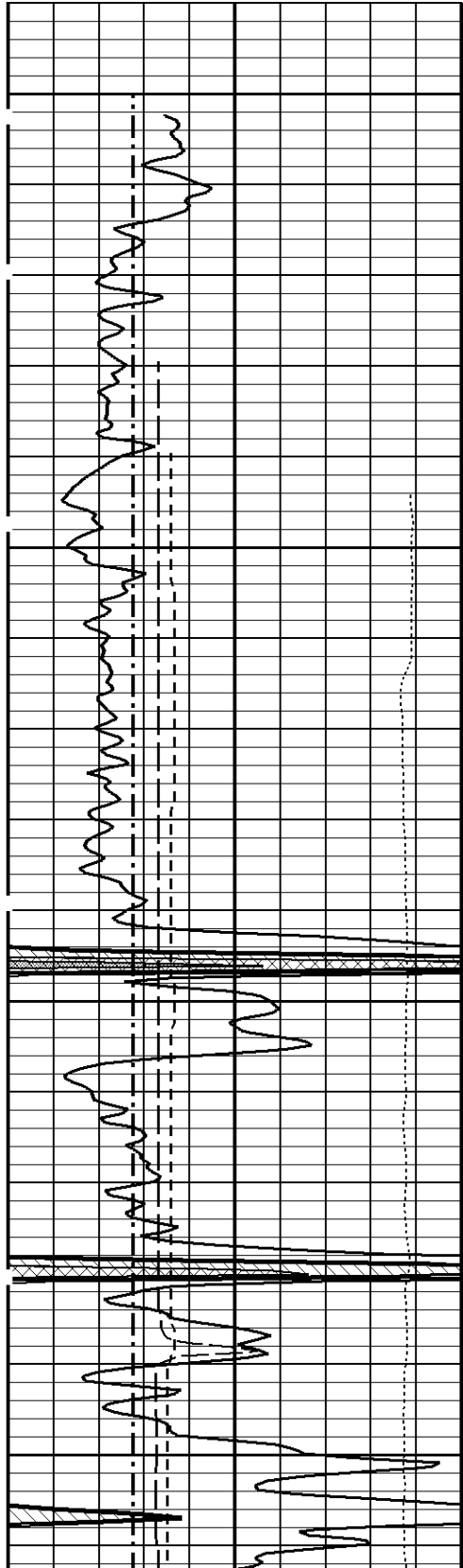
TENSION LBS 	
10000	0
BIT SIZE INCHES (IN) 	
4	14
DENSITY (X) CALIPER INCHES (IN) 	
14 4	24 14
NEUTRON (Y) CALIPER INCHES (IN) 	
14	24

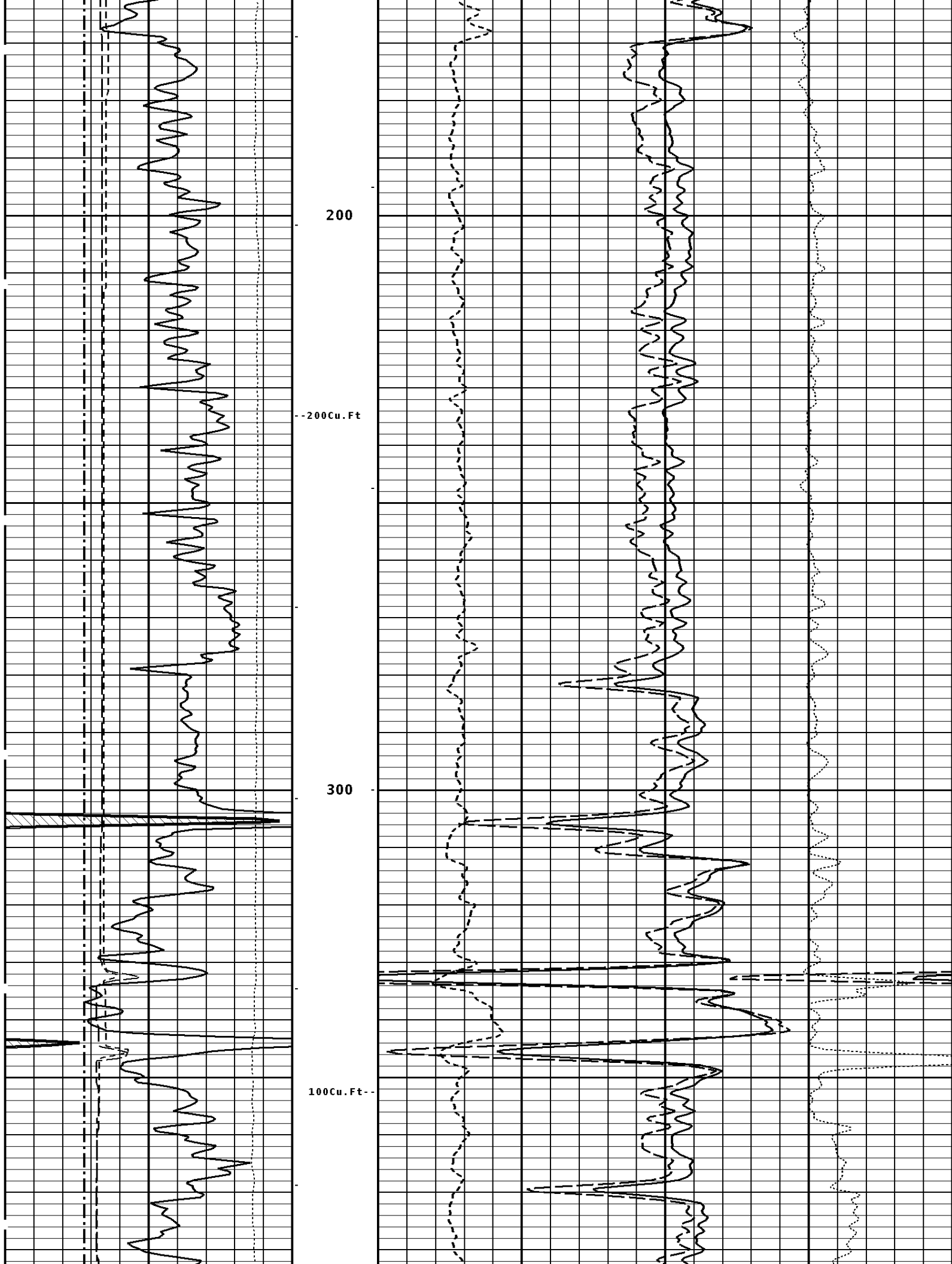
PE CROSS-SECTION BARNS/ELECTRON		DENSITY CORRECTION G/CC
0	10	-0.25
		0.25
DENSITY POROSITY PERCENT (2.71 g/cc)		
70		30

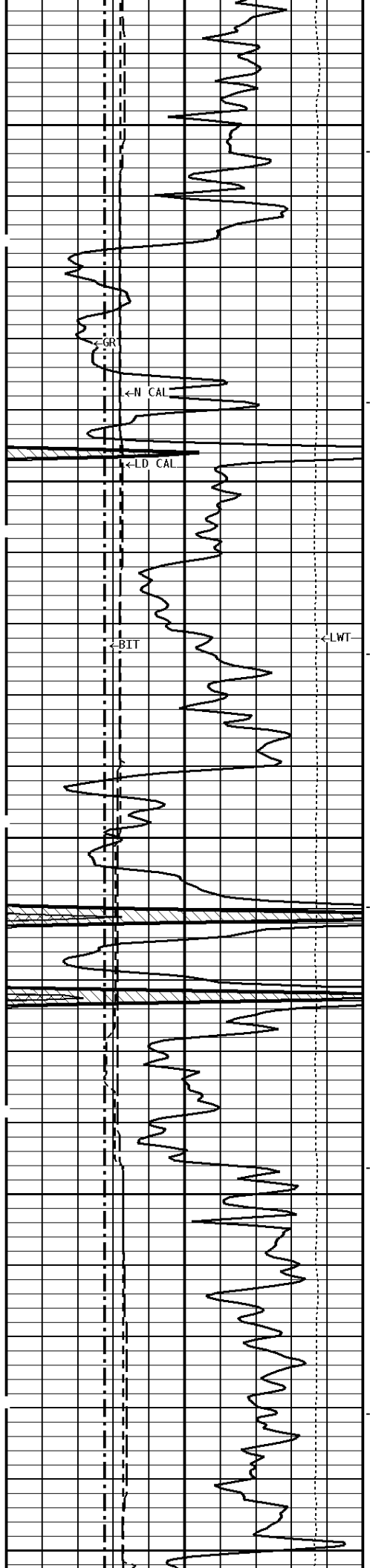
14	24
4	14
GAMMA RAY API UNITS	
200	400
0	200

70	30	30
-10	-10	-50
-BHV AHV- CU. FT		COMPENSATED BULK DENSITY G/CC
3.0		4.0
2.0		3.0
1.0		2.0

**1:240 MAIN SECTION
BULK DENSITY**





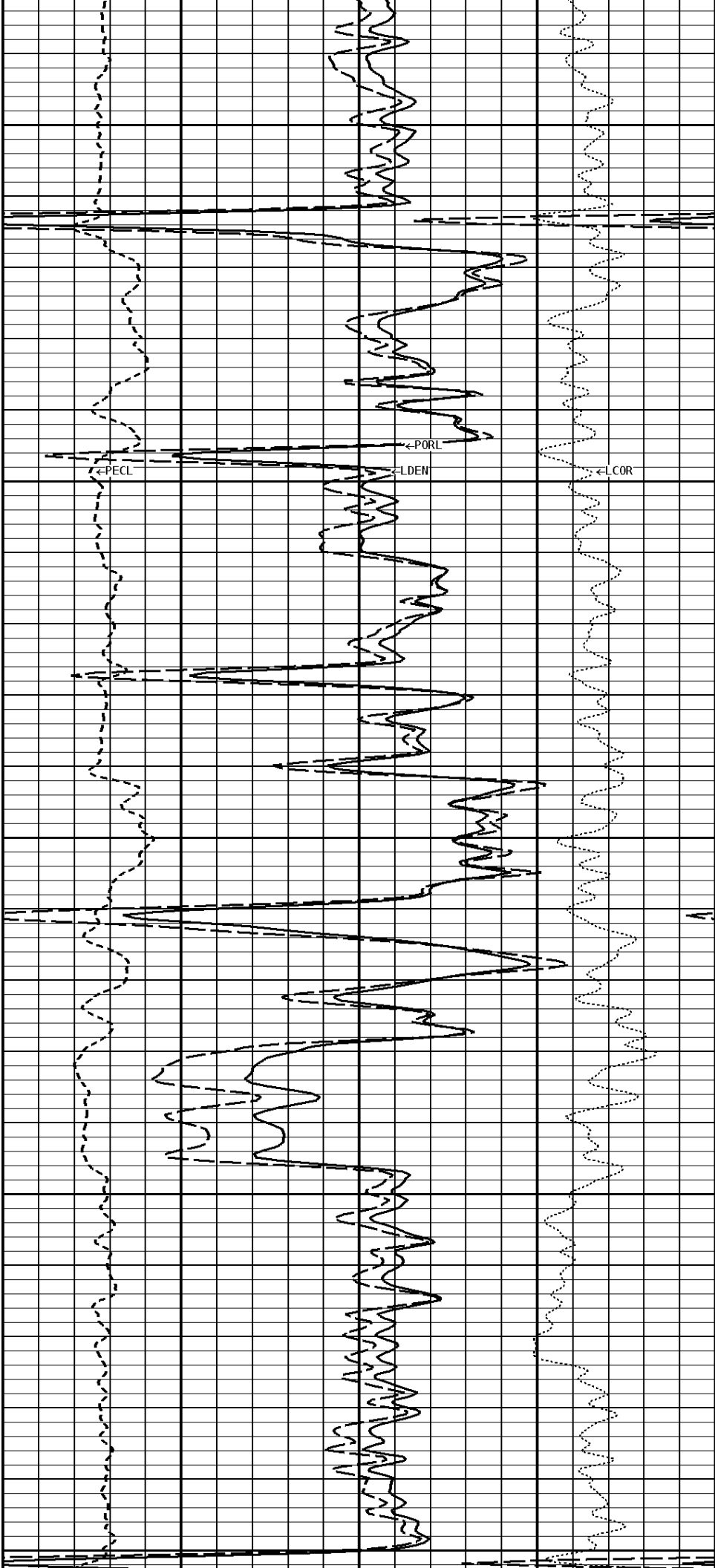


400

500

--100Cu. Ft

600

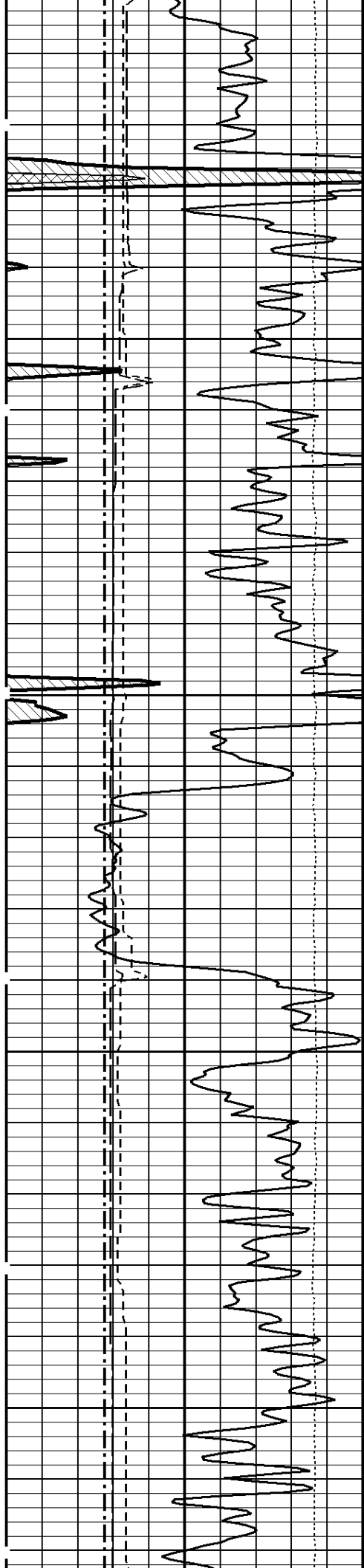


←PORA

←PECL

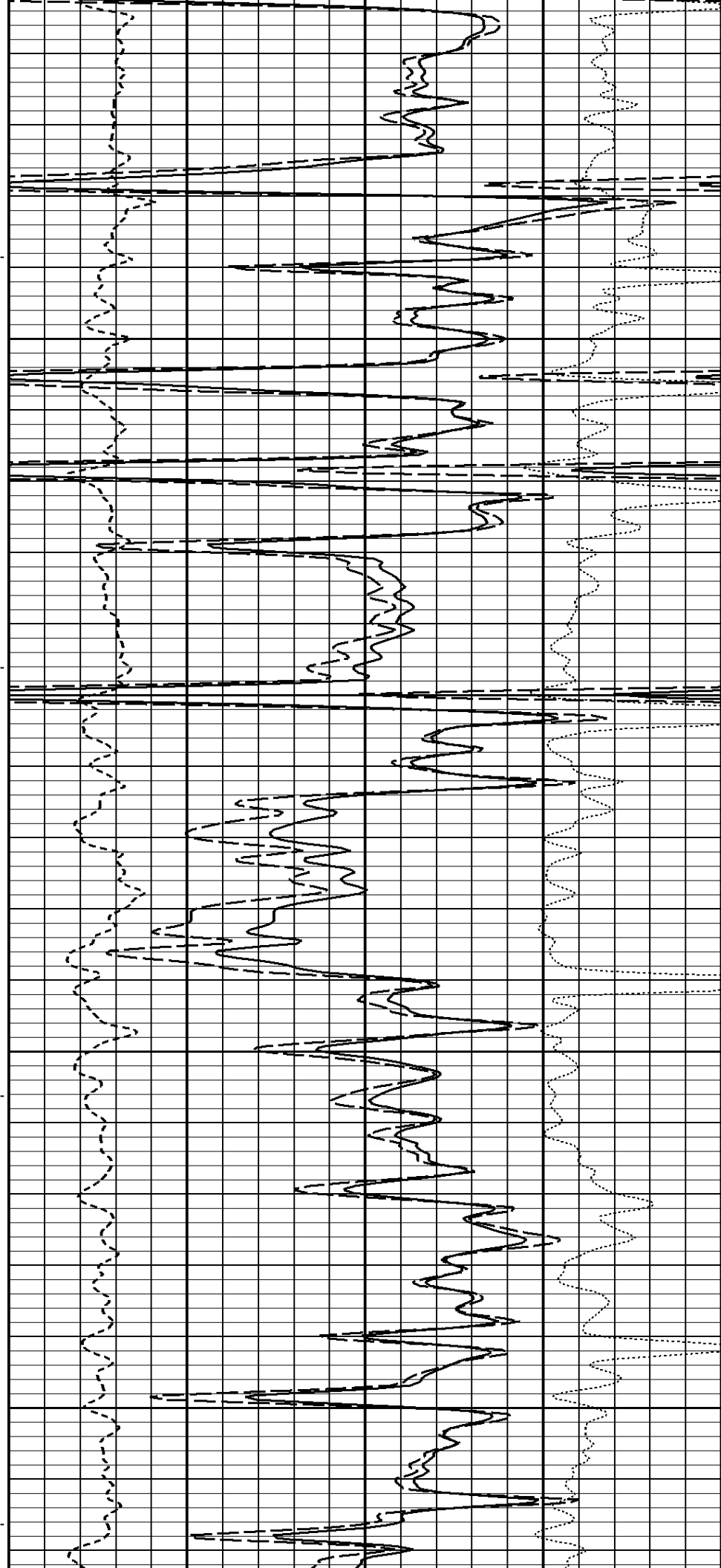
←LDEN

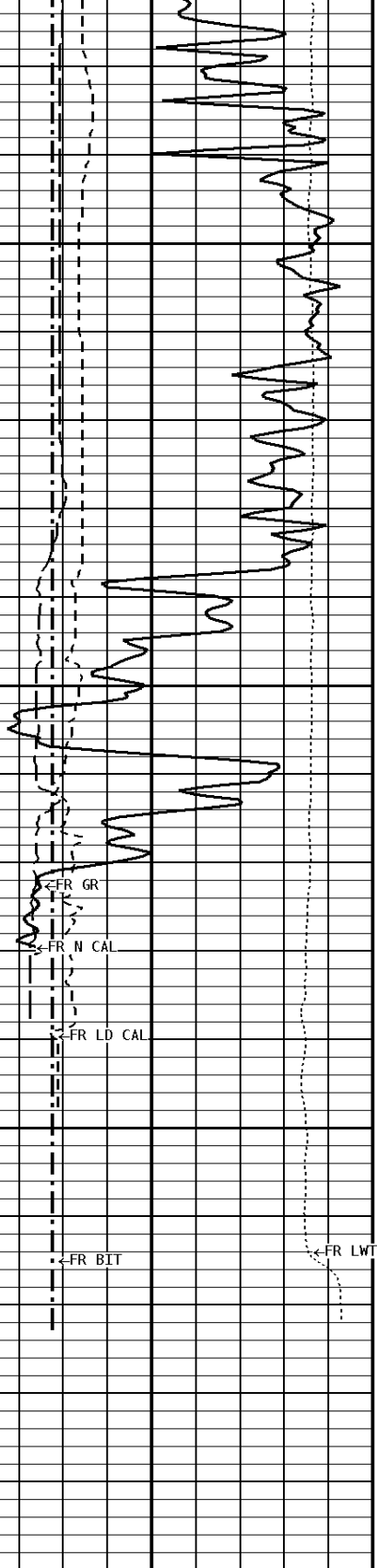
←LCOR



700

800

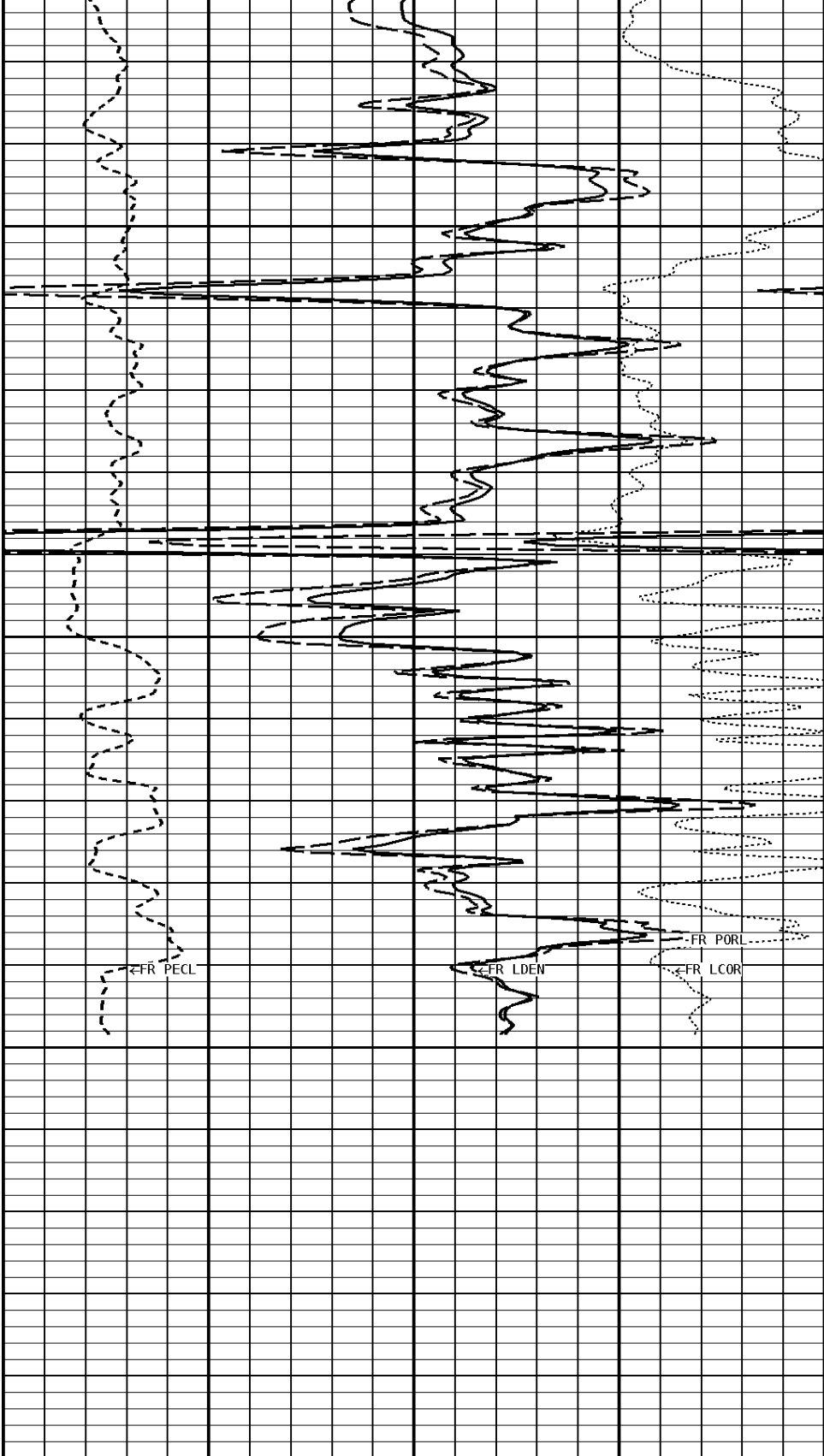




File #1.1.5

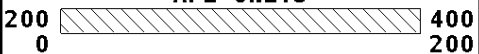
900

965



**1:240 MAIN SECTION
BULK DENSITY**

GAMMA RAY
API UNITS



- BHV AHV -
CU. FT

COMPENSATED BULK DENSITY
G/CC

3.0
2.0
1.0

4.0
3.0
2.0

NEUTRON (Y) CALIPER
INCHES (FH)

DENSITY POROSITY
PERCENT (G 79)

14	INCHES (IN)	24
4		14

14	DENSITY (X) CALIPER INCHES (IN)	24
4		14

4	BIT SIZE INCHES (IN)	14

10000	TENSION LBS	0

70	PERCENT (2.71 g/cc)	30
30		-10

-10		-50

0	PE CROSS-SECTION BARNS/ELECTRON	10
		-0.25
		0.25

*** 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	6.750	in
Casing Diameter	4.500	in
Casing Correction (PHI N)	Disable	

*** Calibration Summary ***

Shop Calibration					
GRT-B					
Performed : 04-APR-2011			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 : 26-Jan-2012			Time : 10:38		
Sensor Suite : CALI-BCN			ID : NDT-BD-123		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1 Ring#2		Ring#1 Ring#2		
CL # 1	6.4 11.4		6.0 12.0		IN.
Shop Calibration					
CNP-AA-024					
Performed : 10-Apr-2012			Time : 09:56		
Sensor Suite : BHC NEUT			ID : CNP-AA-024		
Source ID : N-1046					
	Measured	Calibrated	Verification	Units	
N/F	Tank	Jig	Jig		
Porosity	3.8829	3.6893	3.6889		%
	23.6	20.5	20.5		
Shop Calibration					
LDT-DF					
Performed : 01-DEC-2011			Time : 03:53		
Sensor Suite : CALI-LTH			ID : PDT-GA-464		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1 Ring#2		Ring#1 Ring#2		
CL # 1	7.2 11.0		6.0 12.0		IN.
Shop Calibration					
LDP-DA-066					
Performed : 20-APR-2012			Time : 12:32		
Sensor Suite : BHCPELNG			ID : LDP-DA-066		
Source ID : 2991GW					
	Short Space				
	BKGD	Al	Mg	Al+Fe	Units
LSW1	68	1112	1779	721	CPS
LSW2	71	1347	2142	964	CPS
LSW3	267	3131	5048	2650	CPS
LSW4	328	2797	4058	2458	CPS
LSW5	30	57	68	55	CPS

LSW3	58	57	60	55	CPS
LSW6	88	92	92	91	CPS
LSW7	54	61	62	60	CPS
LSW8	1	4	6	4	CPS
QS	0.238	0.207	0.191	0.206	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	102	1163	4693	709	CPS
LLW2	112	2280	8960	1639	CPS
LLW3	429	4307	16327	3702	CPS
LLW4	560	2041	6579	1845	CPS
LLW5	58	73	137	70	CPS
LLW6	176	174	160	172	CPS
LLW7	113	110	109	111	CPS
LLW8	4	7	20	6	CPS
QL	0.217	0.227	0.189	0.216	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC