



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.

Run Number	1		
Date	09-08-2017		
Date/Time On Bottom	09-08-2017 11:00 am		
Depth to Fluid	0.0 Ft		
Salinity	19500.000		
RMF@BHT	0.120 @ 115 F		
RMC@BHT	0.160 @ 115 F		

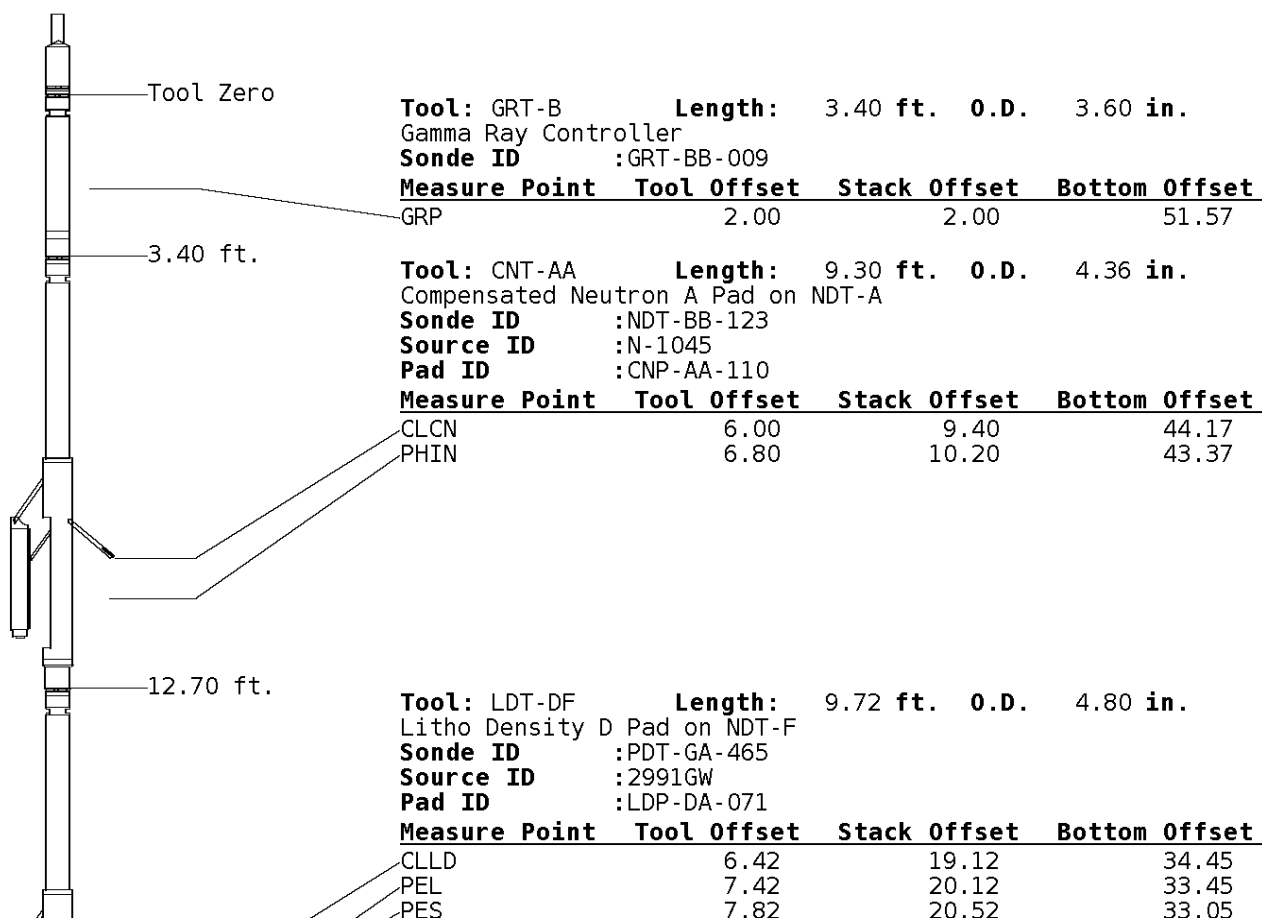
ALL PRESENTATION PER CUSTOMER REQUEST
 GRT,CNT,LDT,MLT,PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 DETAIL IS PRESENTED FROM TD TO SCG

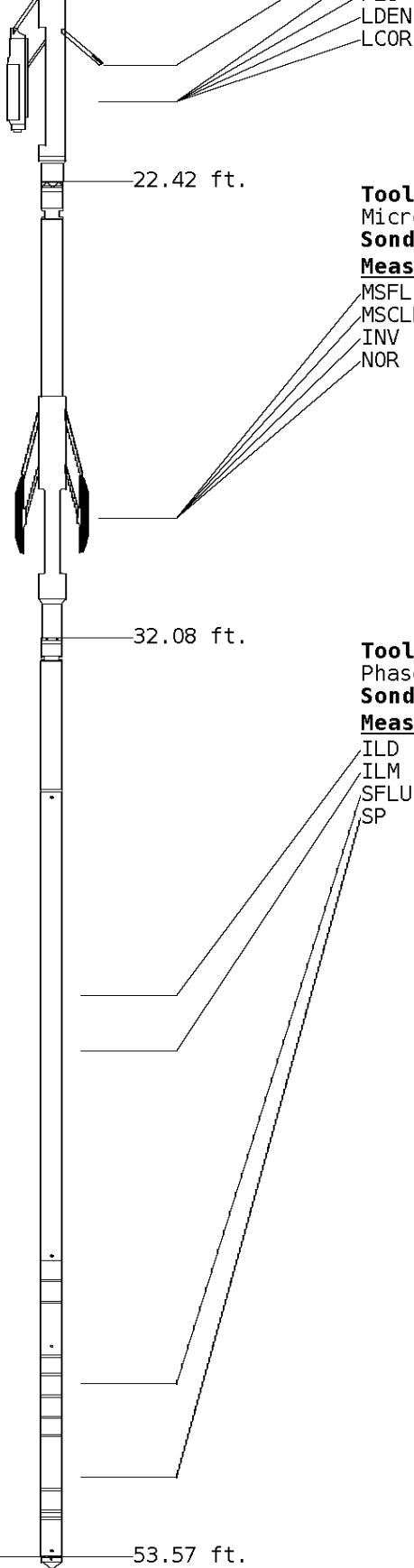
GRT; GRP,
 CNT; PHIN, CLCNIN
 LDT; PORL, LCORN, PECLN, LDENN, CLLDIN
 MLT; NOR_RF, INV_RF, MSCLPIN.
 PIT; ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS;
 B. BROWN
 B. BAILEY

Tool String Schematic

Total Tool Length - 53.57 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.





Tool: MST-DA Length: 9.66 ft. O.D. 6.00 in.
 Micro Spherically Focused (IC)
 Sonde ID :MST-DA-025

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	23.55
MSCLP	7.60	30.02	23.55
INV	7.60	30.02	23.55
NOR	7.60	30.02	23.55

Tool: PIT-CA Length: 21.49 ft. O.D. 3.62 in.
 Phased Dual Induction w/ RM & D
 Sonde ID :PIT-AC-043

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88

Well File: VAL_THELMA 1-24_SEP_8_MSTK

Scale: 1:240 Format: COMSAT

Segment: V1.D1.S6 MAIN

Acquired: 2017-09/08 11:16 3.4.0-13756

Reference: 0

Processed: 2017-09/08 12:24 3.4.0-13756

CALIPER MICRO
INCHES (IN)

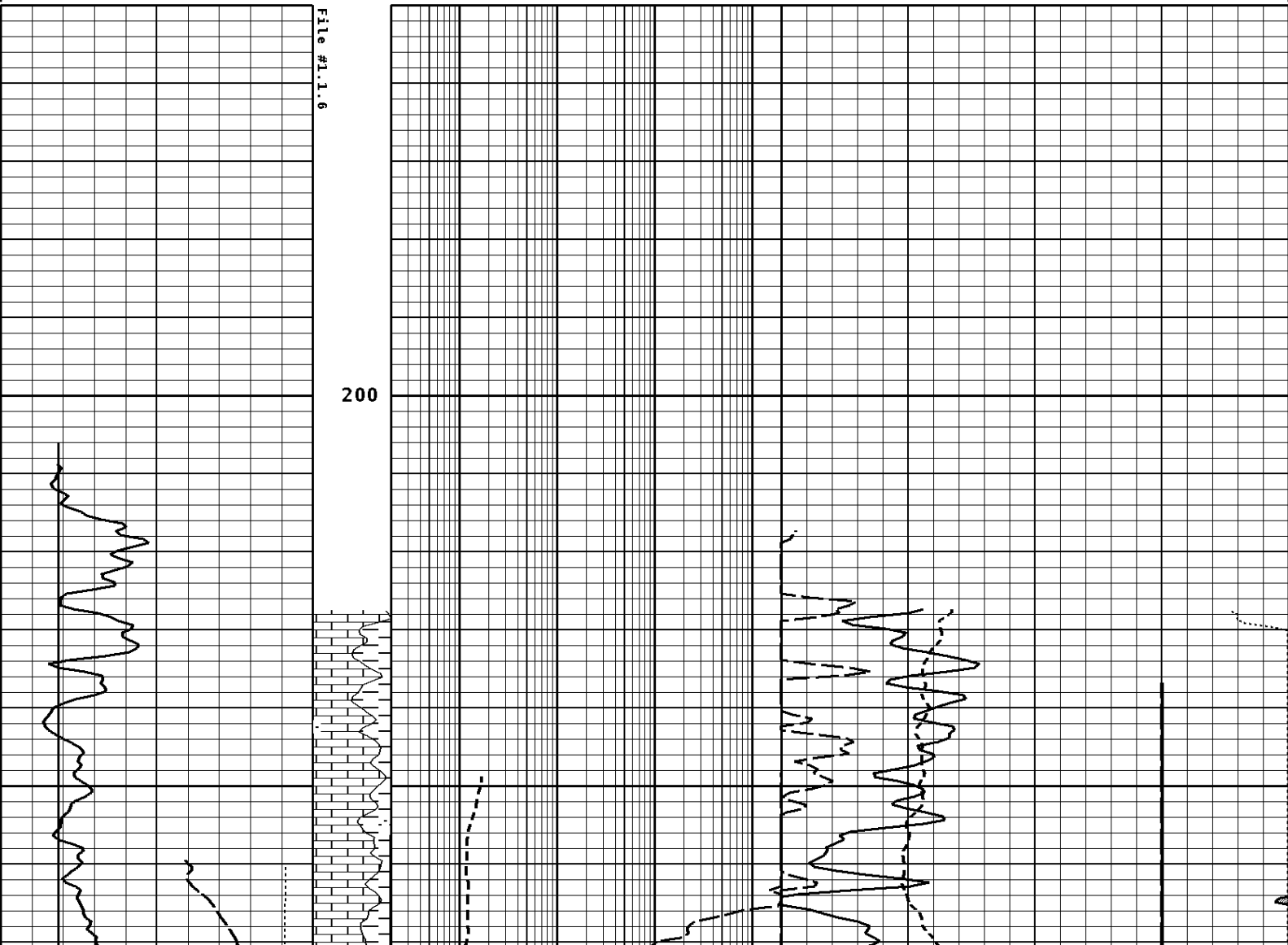
16 26
6 16

BIT SIZE
INCHES (IN)

NORMAL
OHMM

6	16			0	40
NEUTRON (Y) CALIPER INCHES (IN)				INVERSE OHMM	
16	26			0	40
6	16				
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz		DENSITY CORRECTION G/CC	
16	26			-0.75	0.25
6	16				
TENSION LBS		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM	PE CROSS-SECTION BARNS/ELECTRON	
10000	0		0.22000.0	0	20
SPONTANEOUS POTENTIAL mV		Volume Dolo/Shale	DEEP INDUCTION OHMM	DENSITY POROSITY (2.71g/cc) PERCENT	
→ ←10			0.22000.0	7030	30-10
				-10	-50
GAMMA RAY API UNITS		BHV AHV CU.FT	MEDIUM INDUCTION OHMM	NEUTRON POROSITY (LIMESTONE) PERCENT	
150	300		0.22000.0	30	-10
0	150				

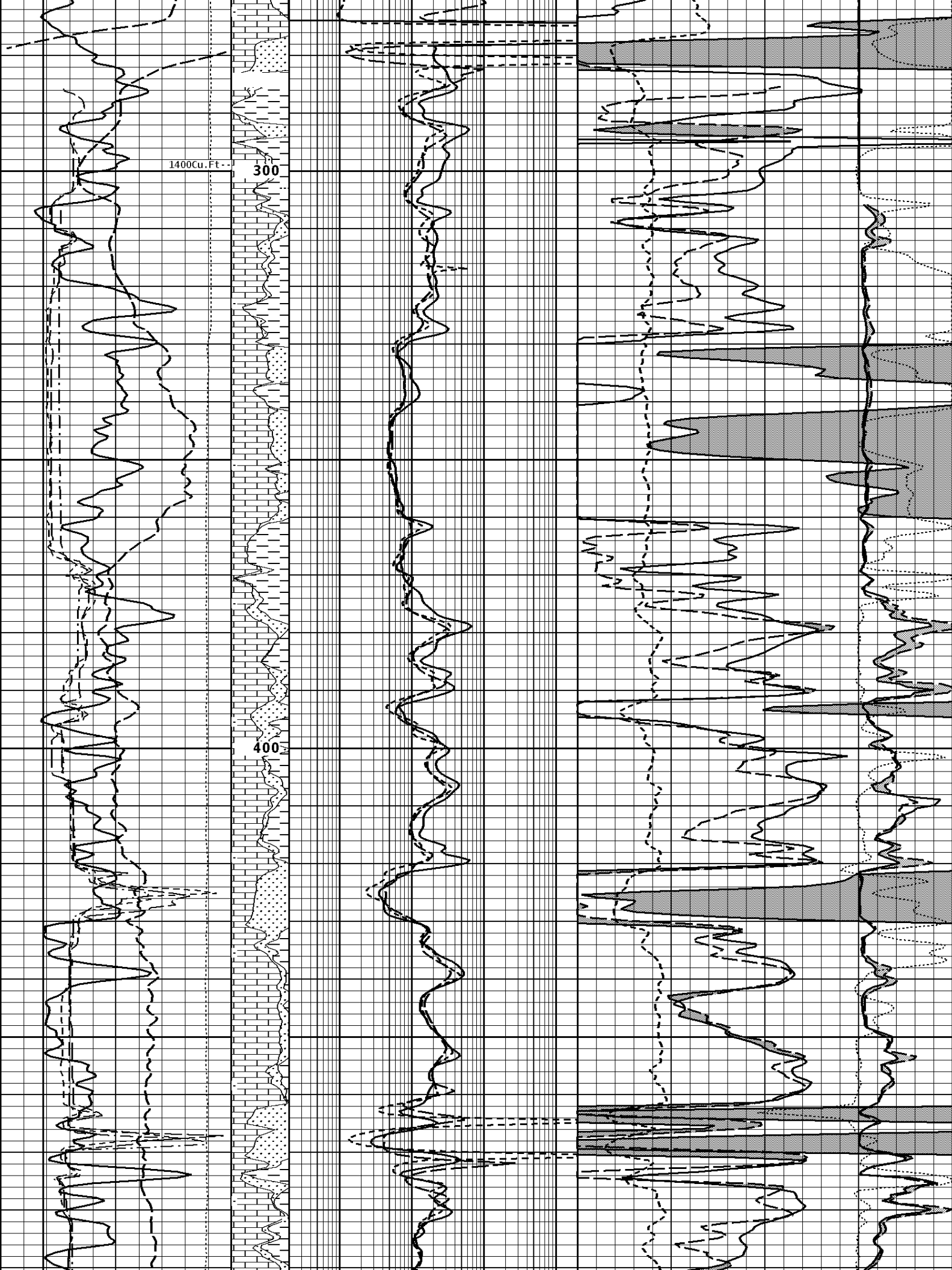
1:240 MAIN SECTION

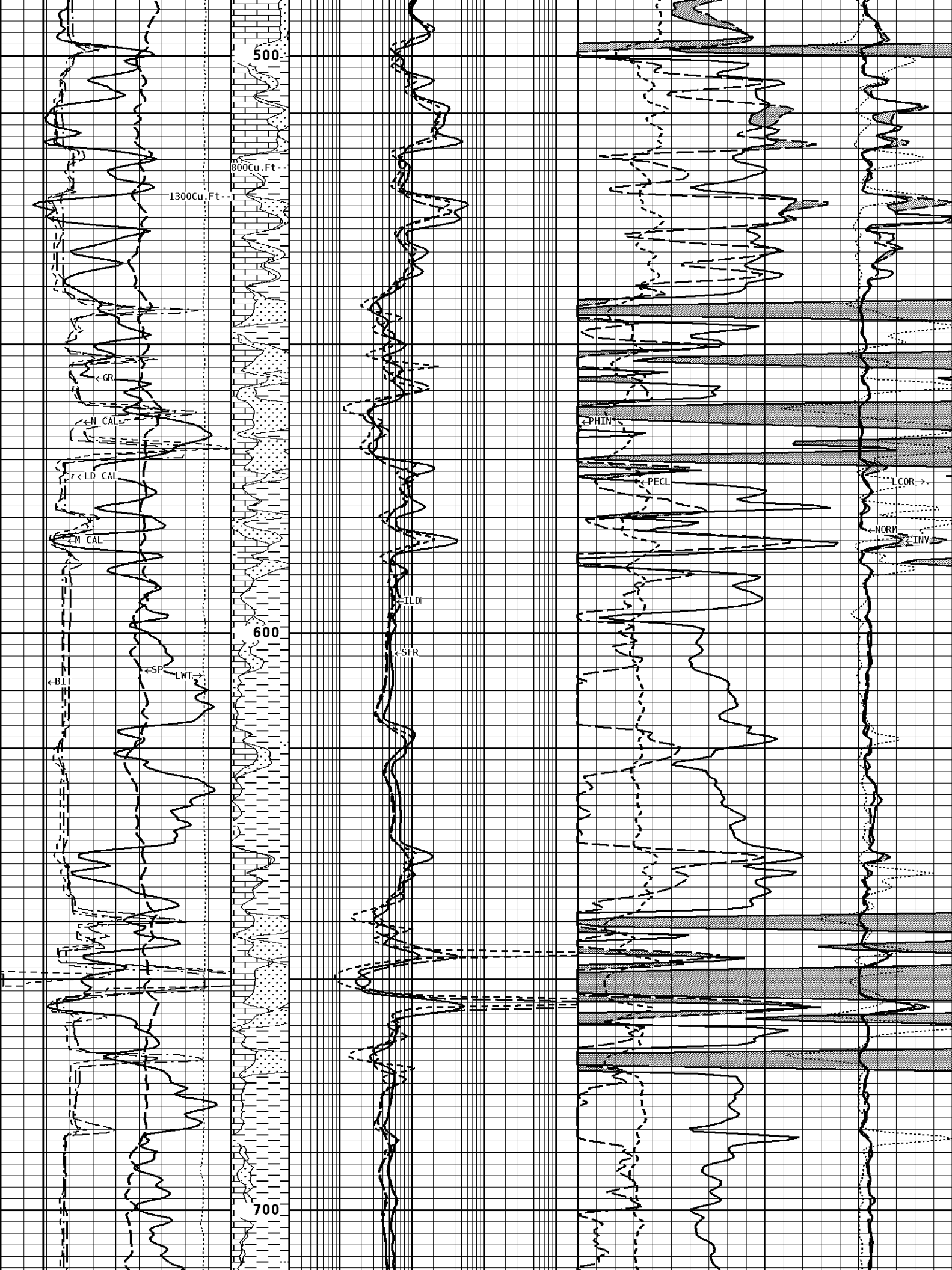


1400Cu.Ft.

300

400



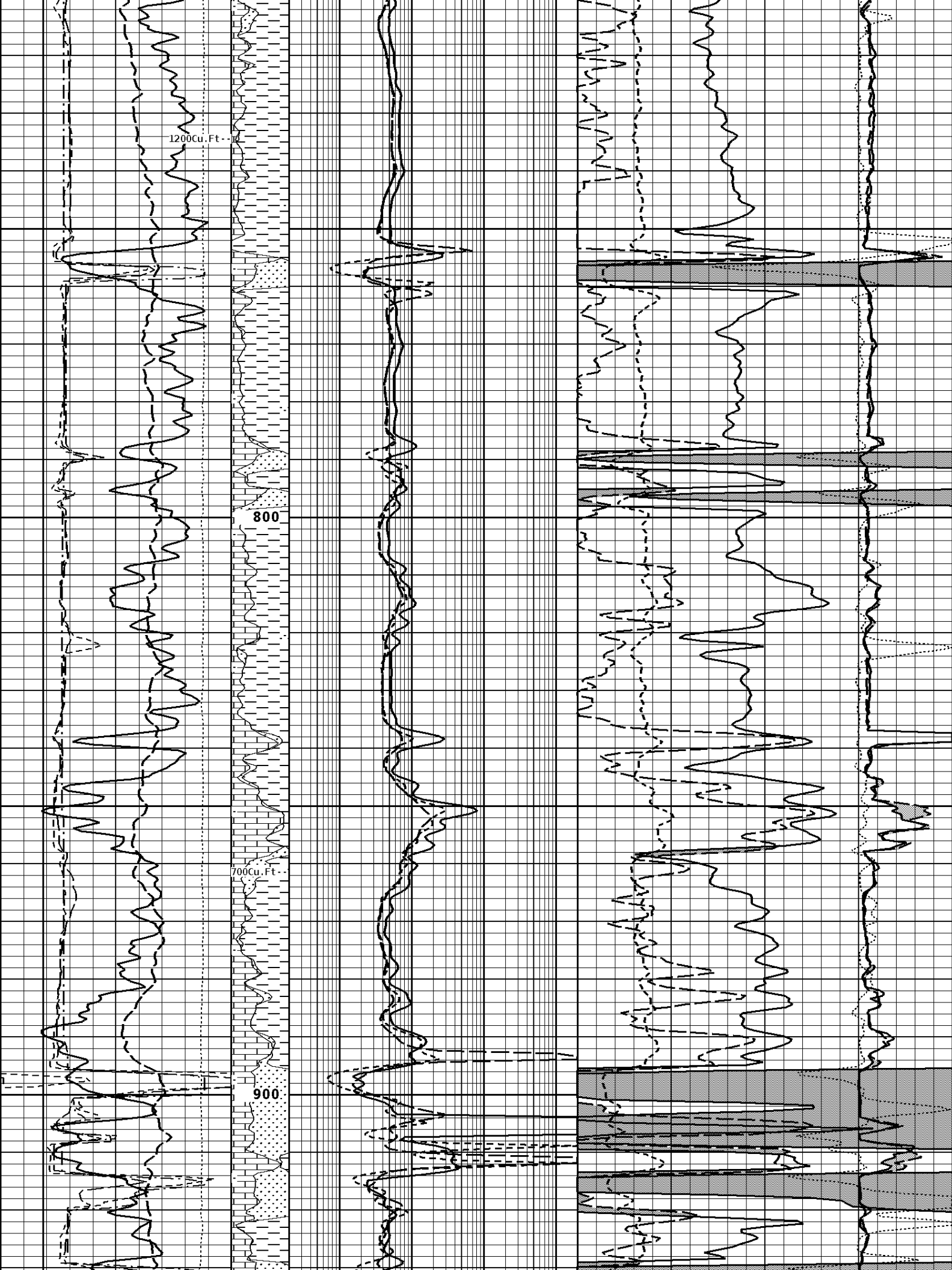


1200Cu.Ft.

800

700Cu.Ft.

900



1100cu.Ft.

1000

1100

←GR

←N CAL

←LD CAL

←H CAL

←BIT

←SP

←LWT

←ILD

←SFR

←PHIN

←PECL

←PORL

←L COR

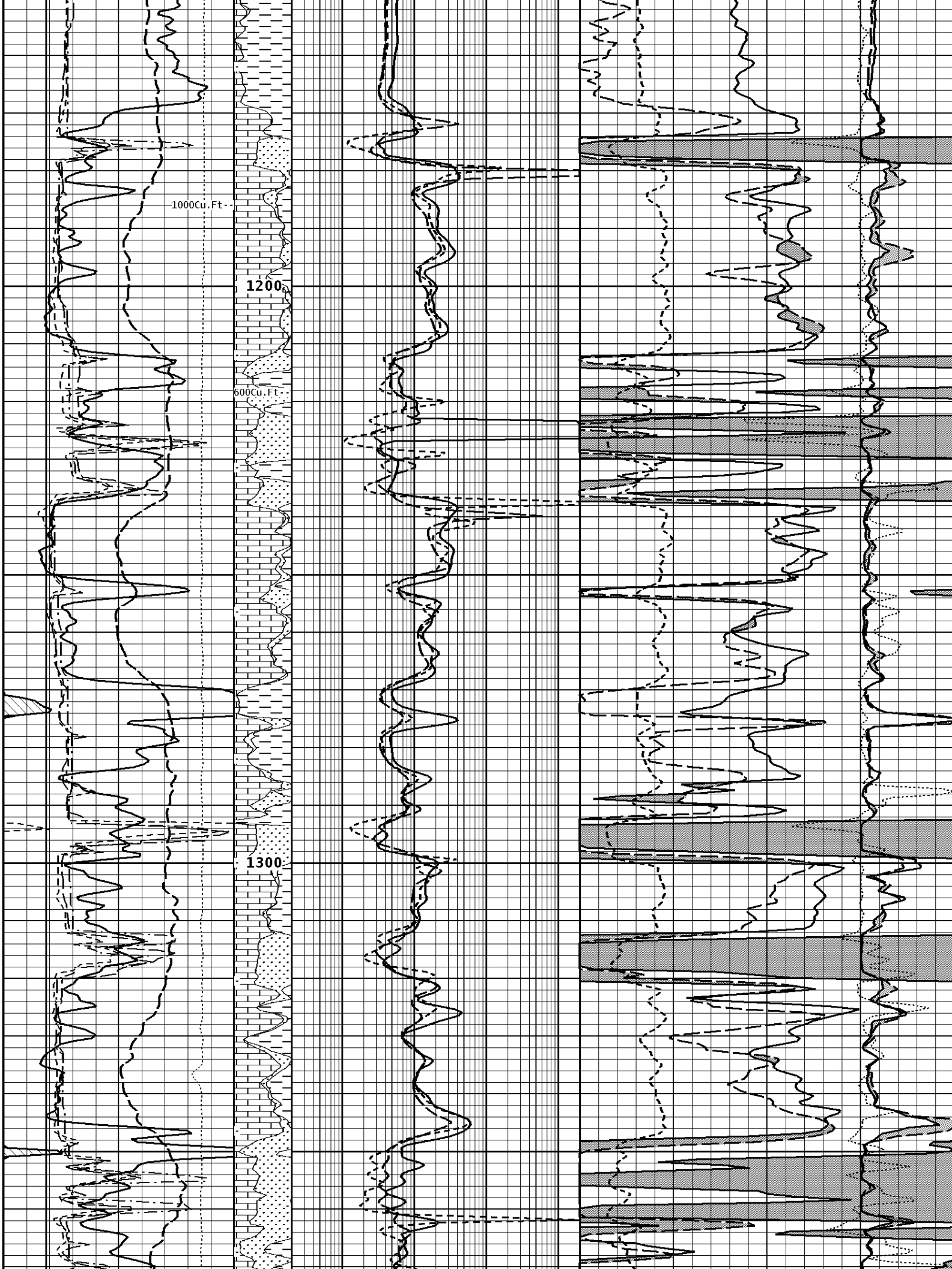
←NORM
←INV

1000Cu.Ft.

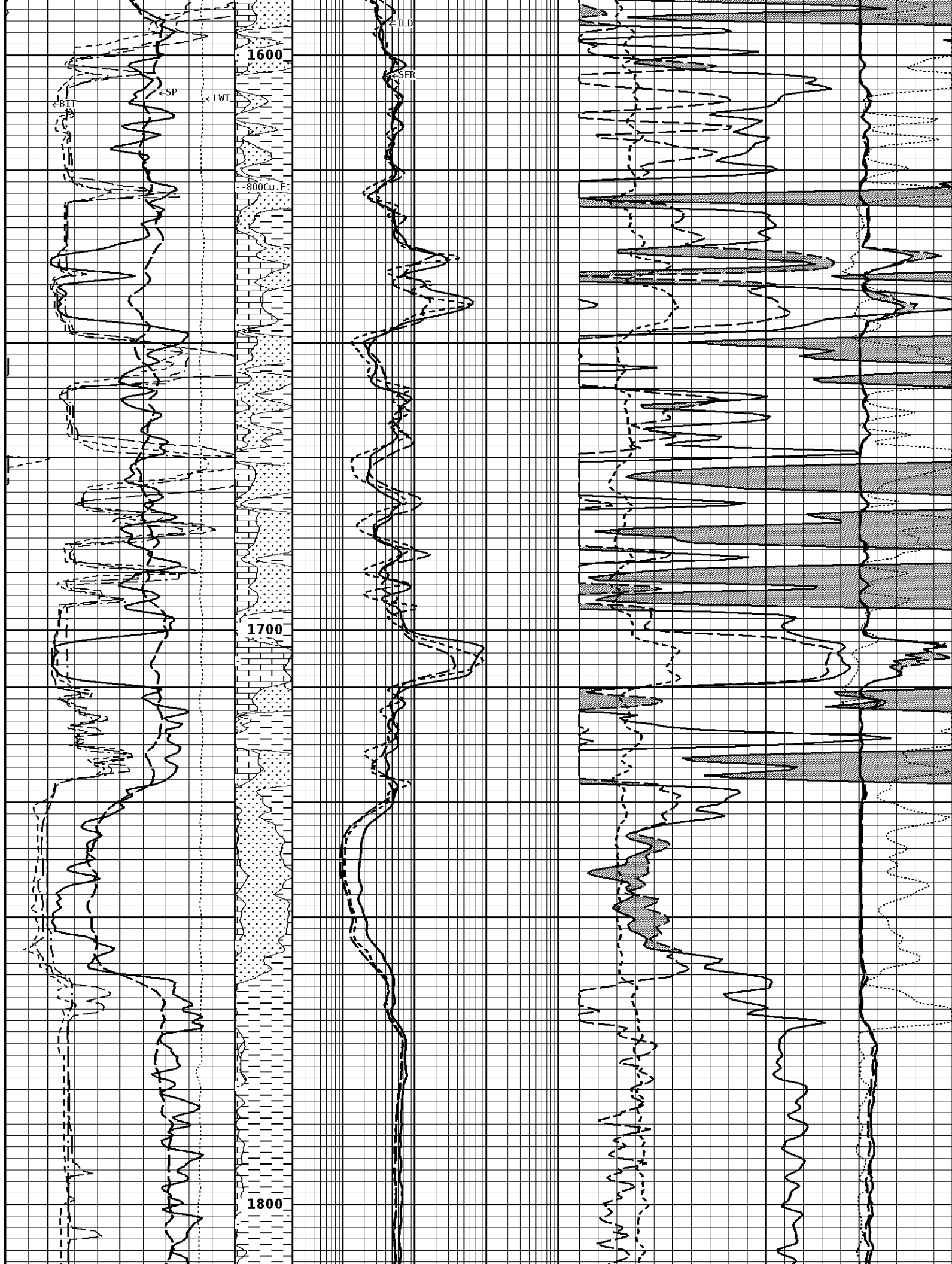
1200

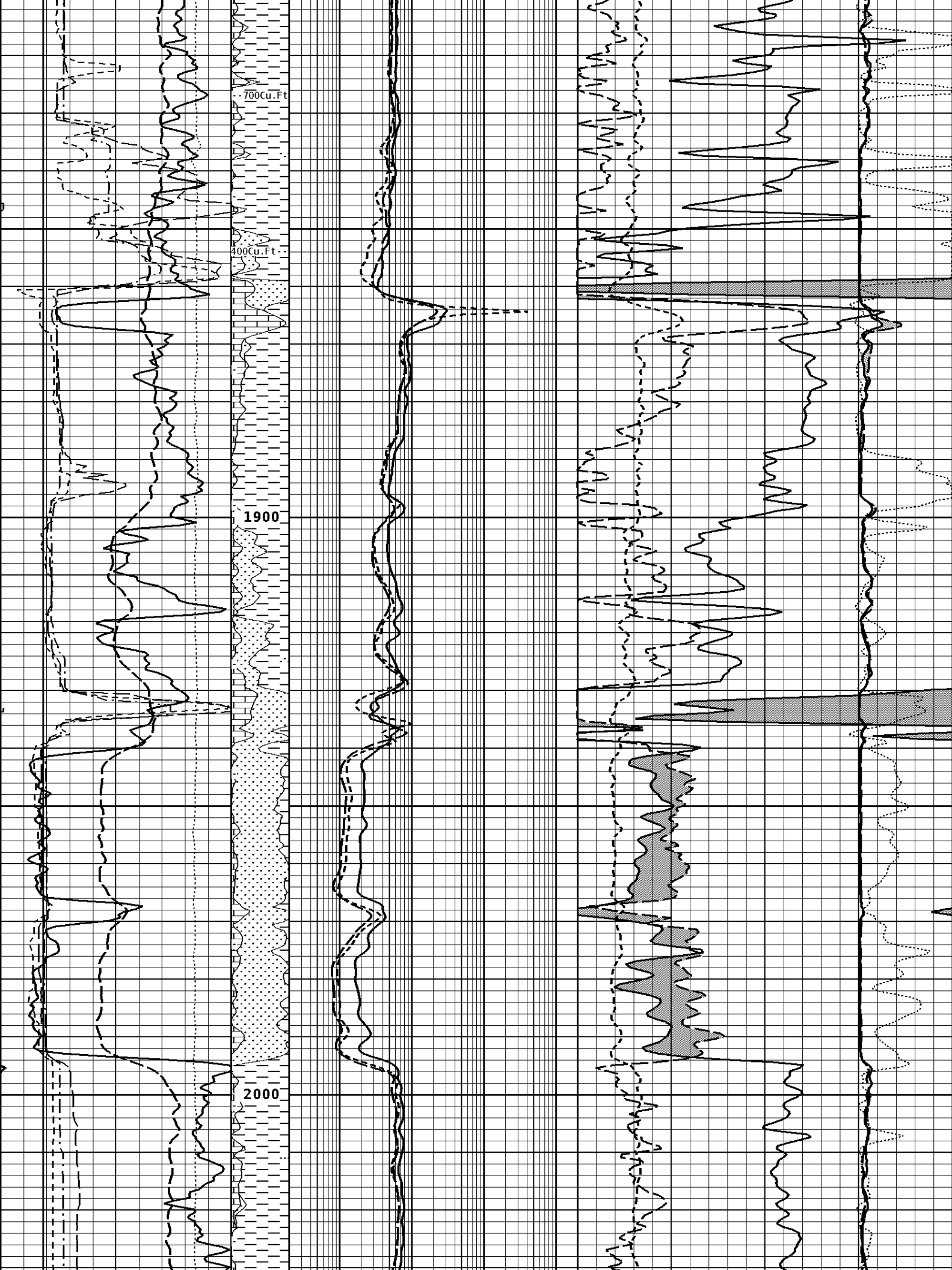
600Cu.Ft.

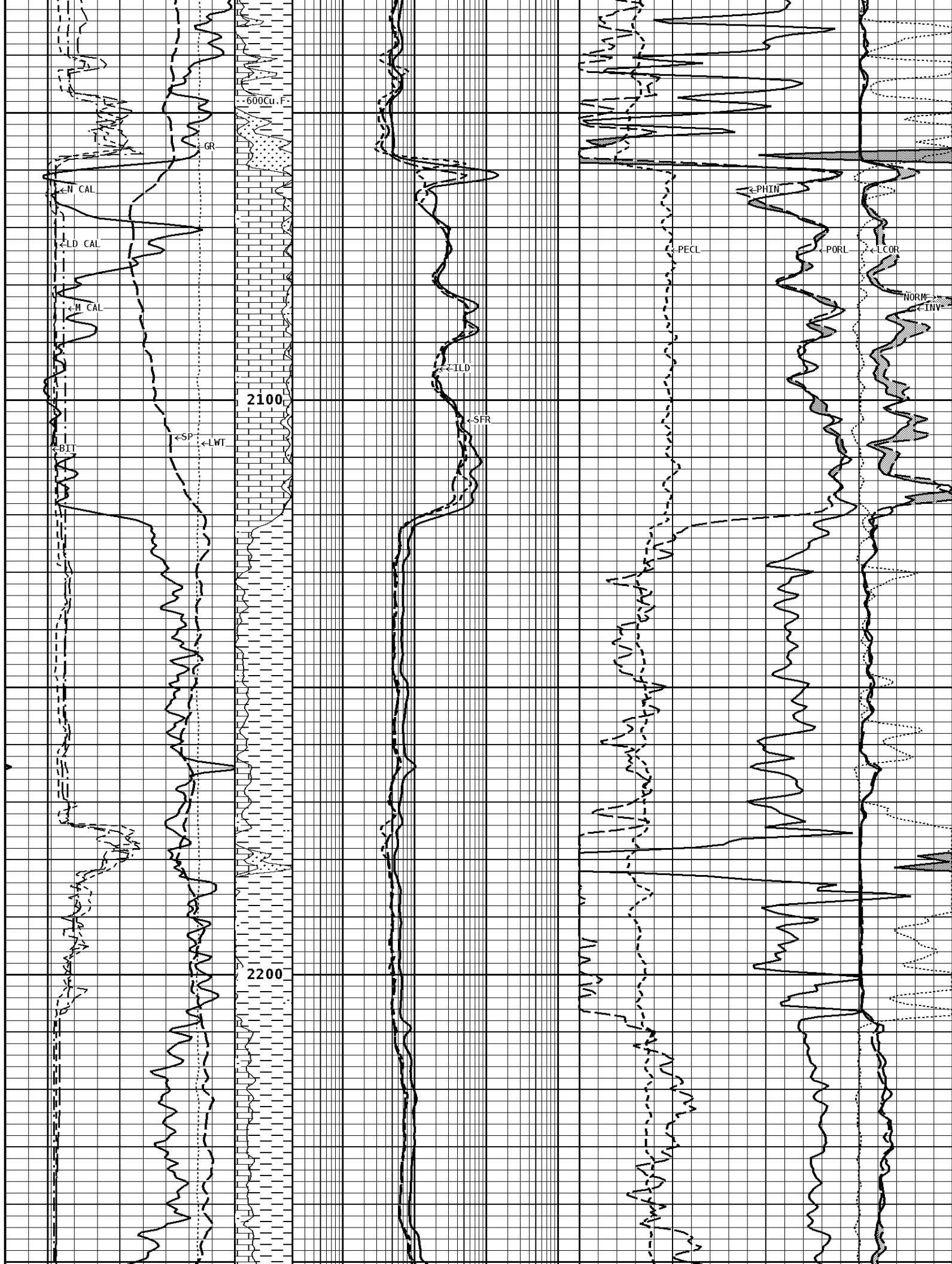
1300

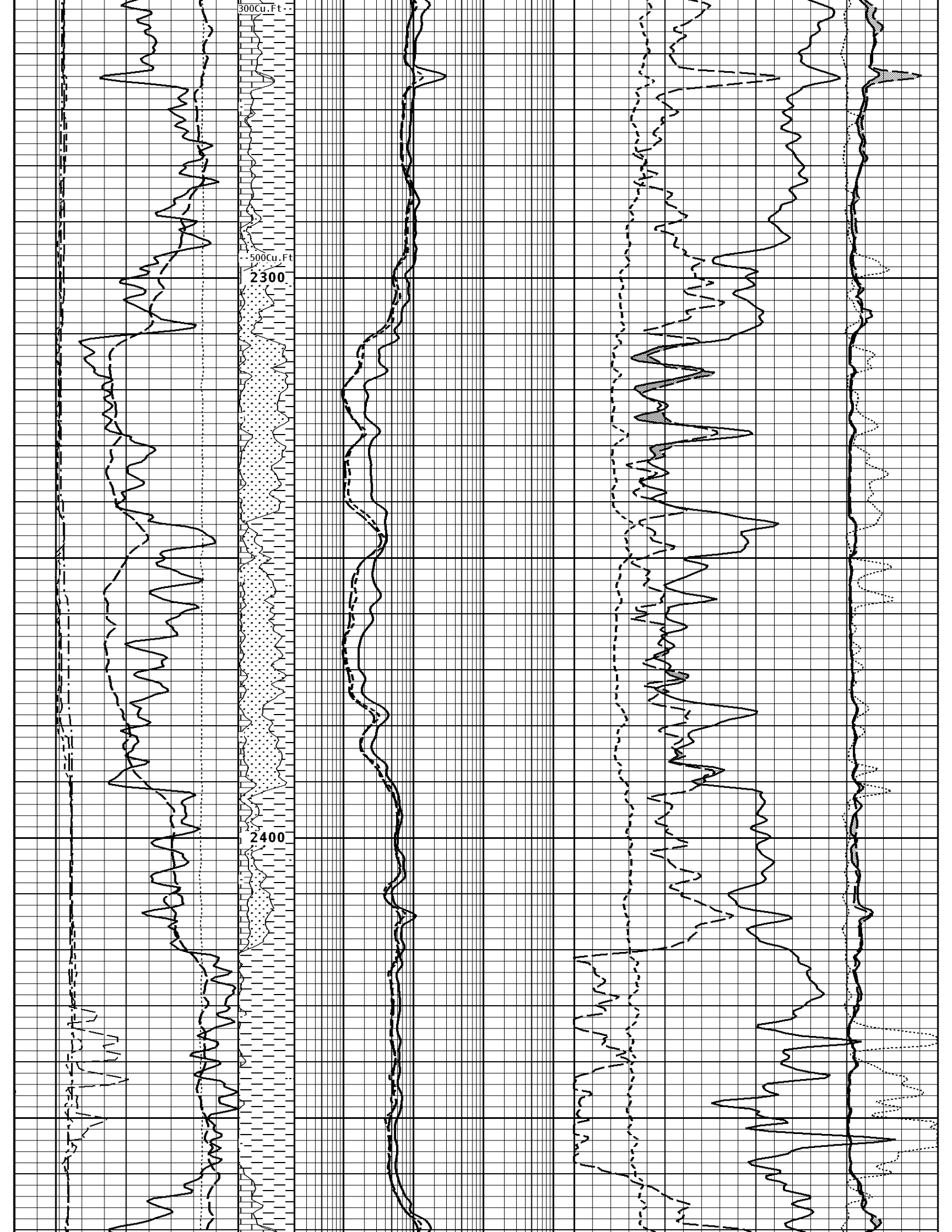


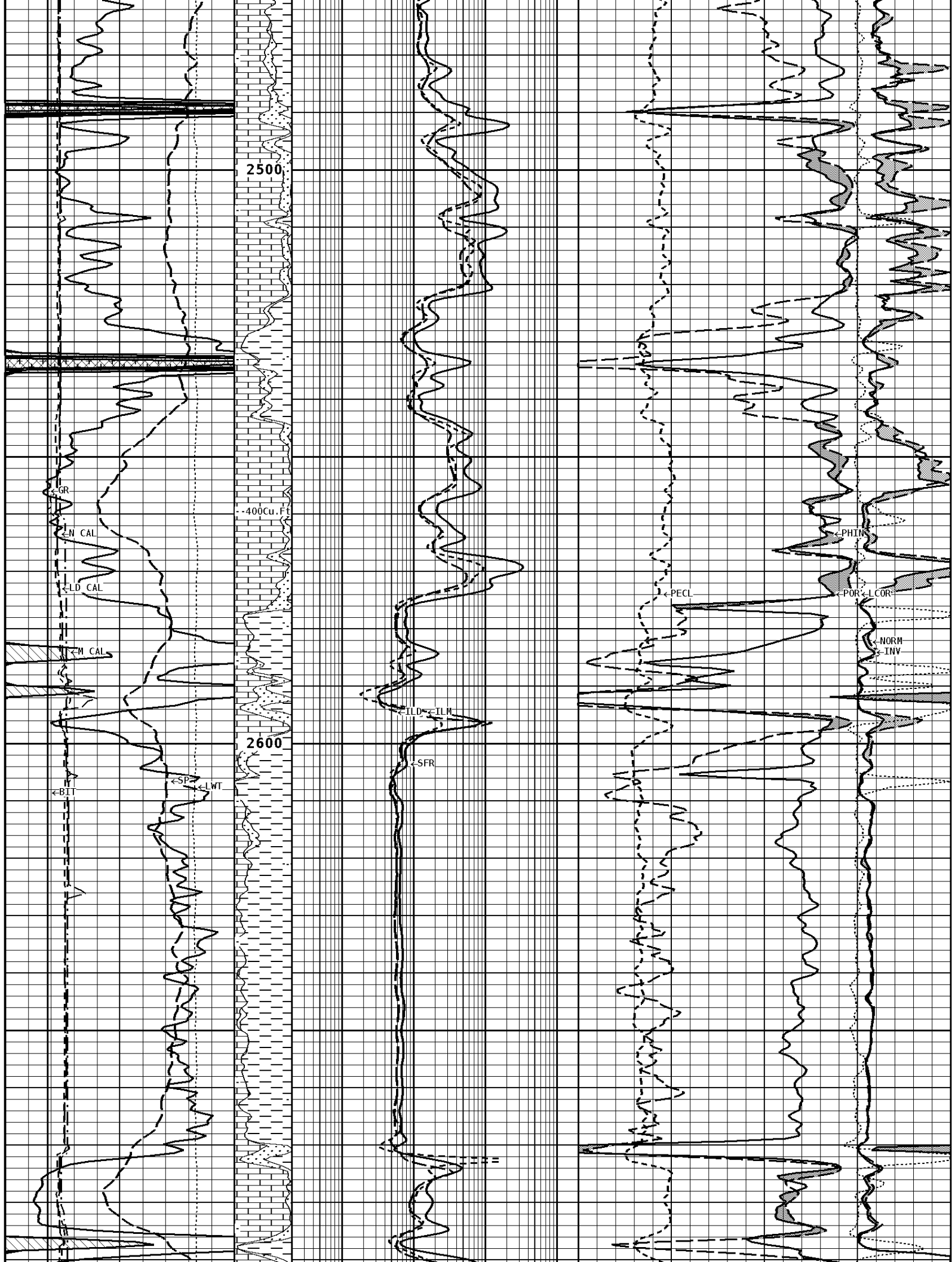


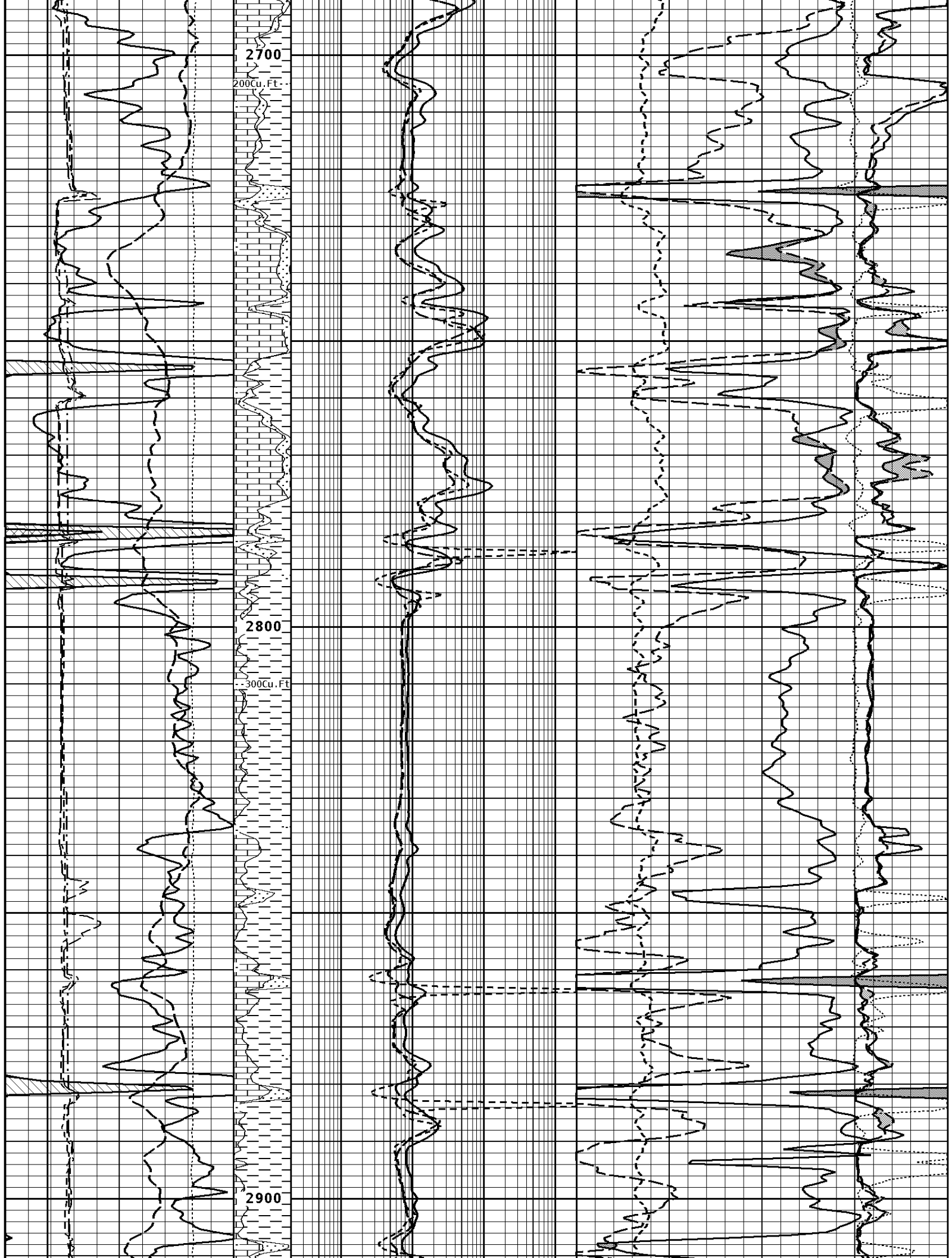


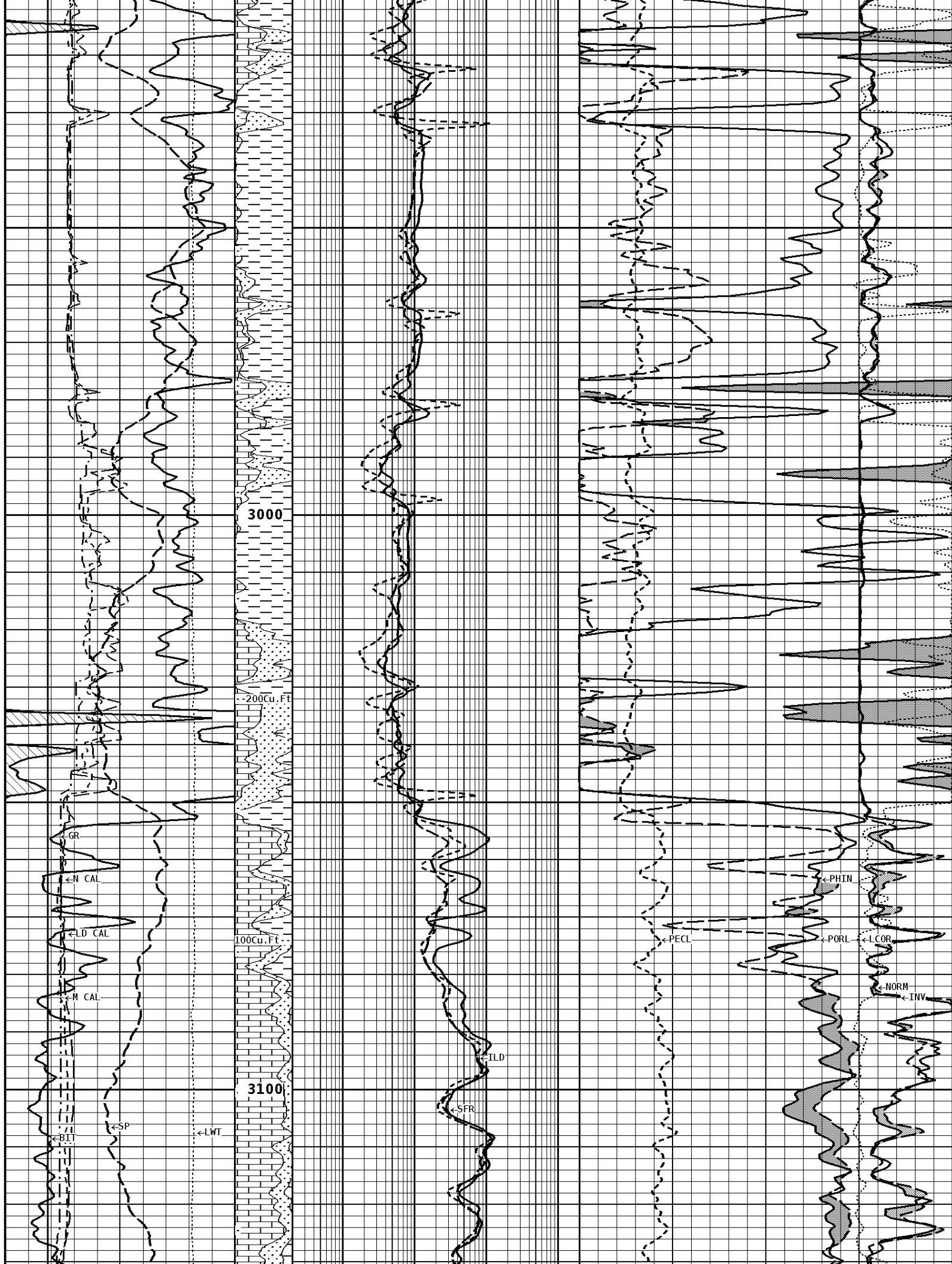


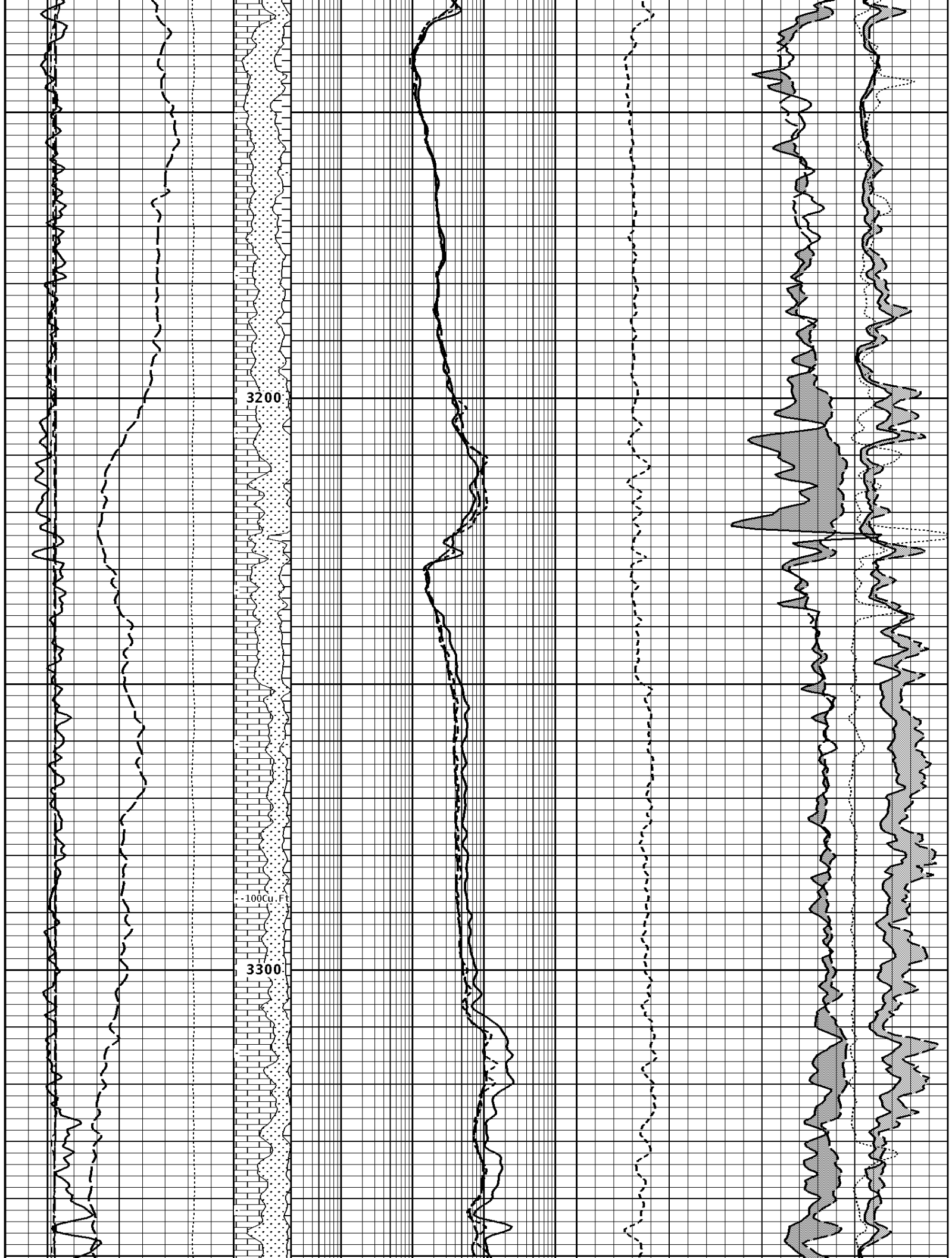




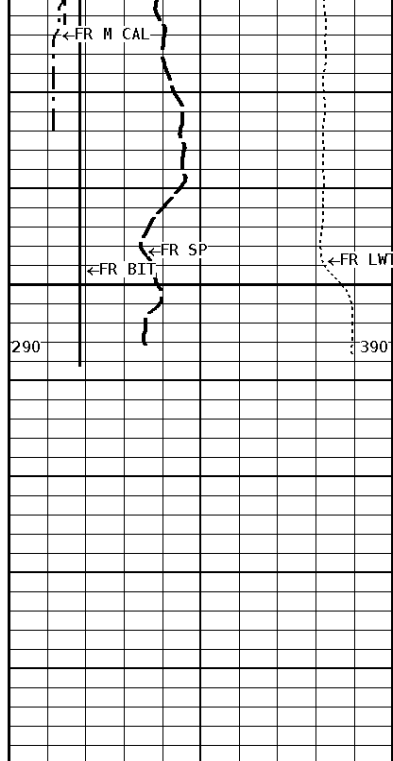




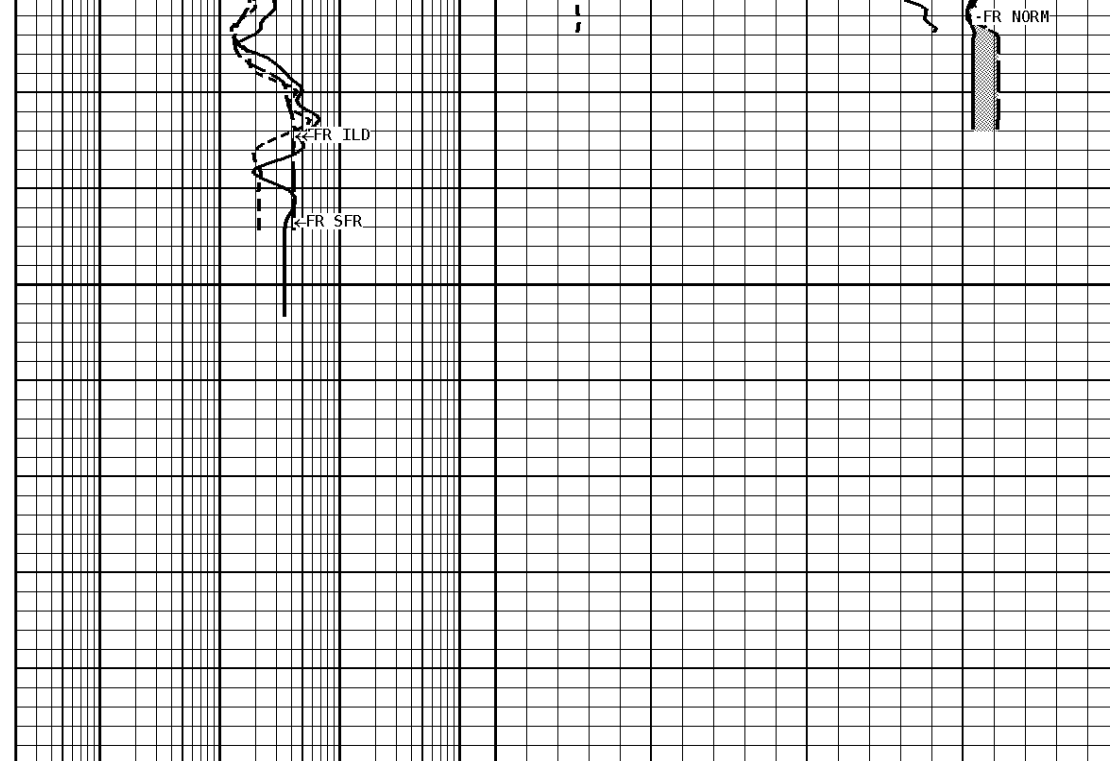








File #1.1.6



1:240 MAIN SECTION

GAMMA RAY API UNITS 150 0 300 150	BHV AHV CU. FT	MEDIUM INDUCTION OHMM 0.2 2000.0 30 -10	NEUTRON POROSITY (LIMESTONE) PERCENT
SPONTANEOUS POTENTIAL mV → ← 10	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0 70 30 -10 -50	DENSITY POROSITY (2.71g/cc) PERCENT
TENSION LBS 10000 0	Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0 0 20	PE CROSS-SECTION BARNs/ELECTRON
DENSITY (X) CALIPER INCHES (IN) 16 6 26 16	Volume Quartz		DENSITY CORRECTION G/CC -0.75 0.25
NEUTRON (Y) CALIPER INCHES (IN) 16 6 26 16			INVERSE OHMM 0 40
BIT SIZE INCHES (IN) 6 16			NORMAL OHMM 0 40
CALIPER MICRO INCHES (IN) 16 6 26 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 Thickness	0.250 in
Casing Correction (PHI N)	Disable
Hole Substance	Fluid
BHT Depth	3599.000 ft
Borehole Temperature	115.0 degF
Temperature Gradient	1.00 DFHF
Resistivity Of Mud	0.200 ohmm
MSTNG Normal Correction	-0.50 ohmm
MSTNG Inverse Correction	0.00 ohmm

Well File: VAL_THELMA 1-24 SEP 8 MSTK

Scale: 1:240

Format: COMSAT

Segment: V1.D1.S5 REPEAT

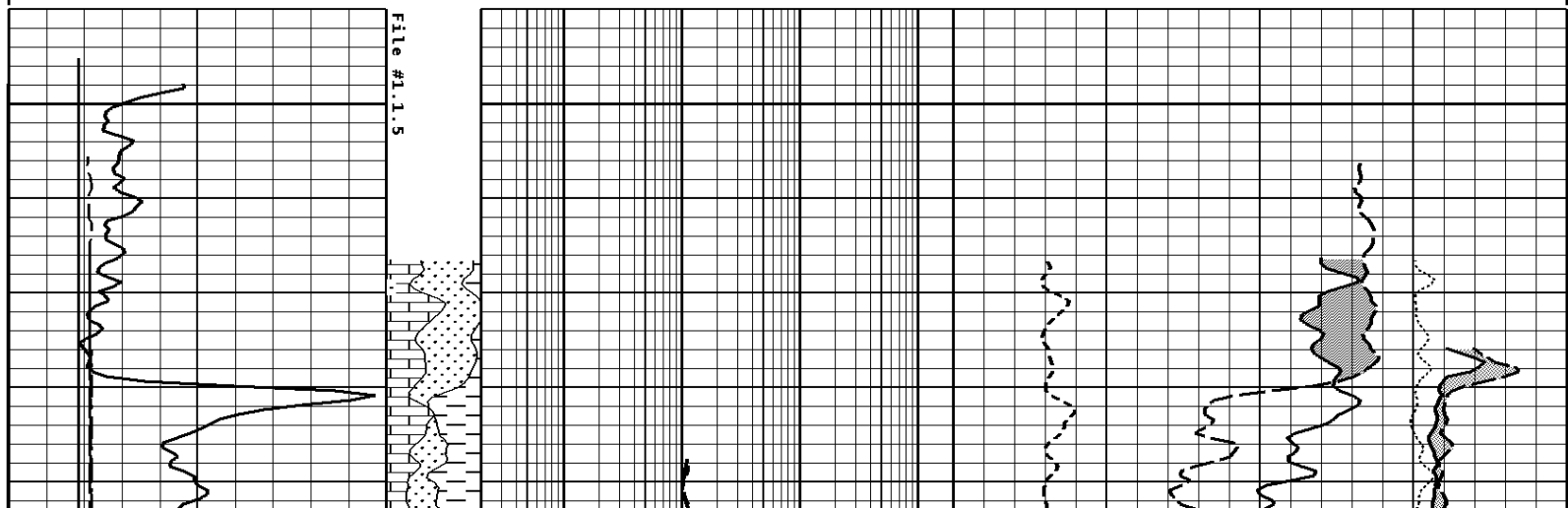
Acquired: 2017-09/08 11:05 3.4.0-13756

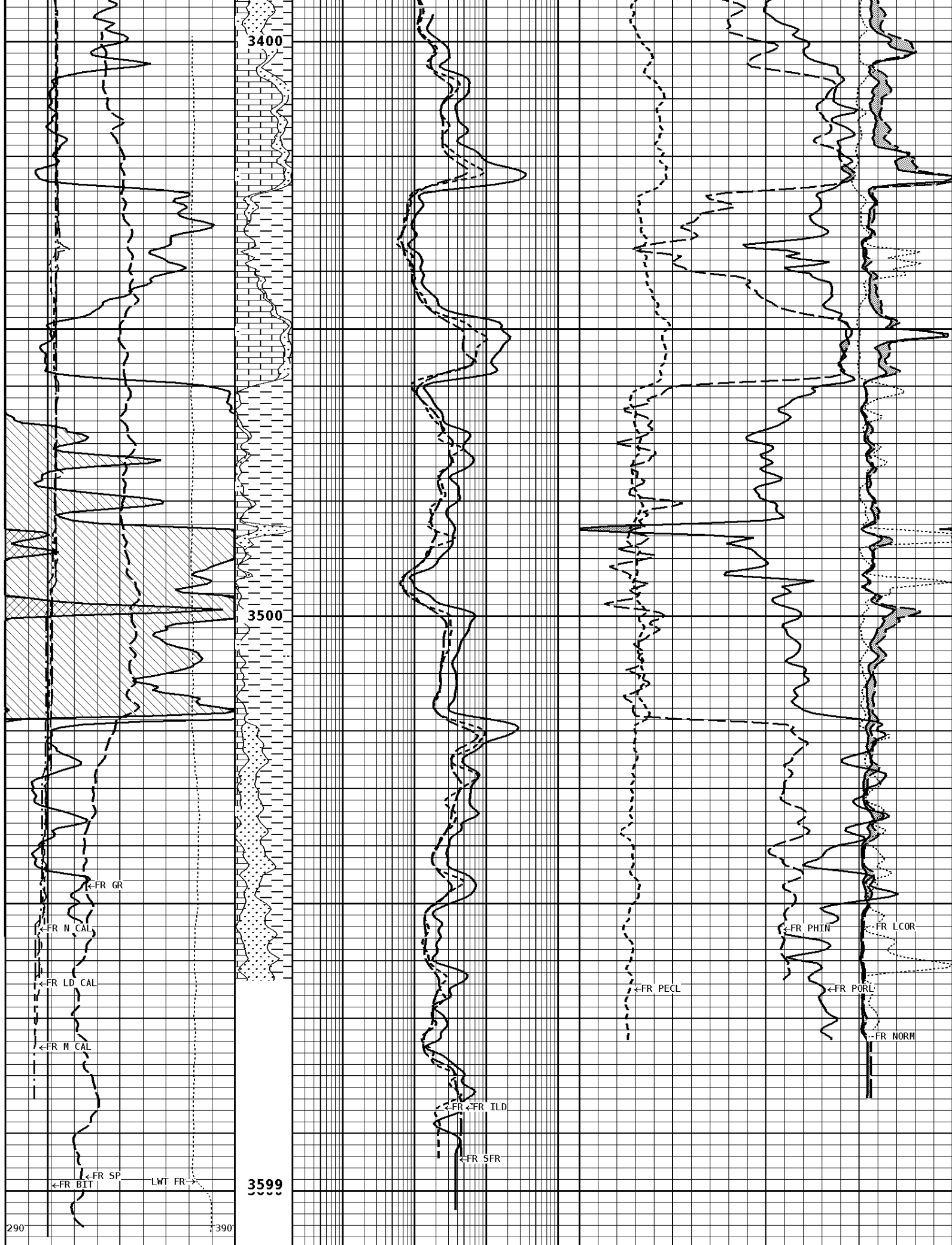
Reference: 0

Processed: 2017-09/08 12:24 3.4.0-13756

CALIPER MICRO INCHES (IN)					
16 6	26 16				
BIT SIZE INCHES (IN)				NORMAL OHMM	
6	16			0	40
NEUTRON (Y) CALIPER INCHES (IN)				INVERSE OHMM	
16 6	26 16			0	40
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	DENSITY CORRECTION G/CC		
16 6	26 16		-0.75 0.25		
TENSION LBS		Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM	PE CROSS-SECTION BARNs/ELECTRON	
10000	0		0.2 2000.0 0	20	
SPONTANEOUS POTENTIAL mV		Volume Dolo/Shale	DEEP INDUCTION OHMM	DENSITY POROSITY (2.71g/cc) PERCENT	
→ ← 10			0.2 2000.0 70 30	30 -10	
				-10 -50	
GAMMA RAY API UNITS		BHV AHV CU. FT	MEDIUM INDUCTION OHMM	NEUTRON POROSITY (LIMESTONE) PERCENT	
150  300	0 150		0.2 2000.0 30	-10	

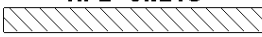
1:240 REPEAT SECTION





File #1.1.5

1:240 REPEAT SECTION

GAMMA RAY API UNITS 150  300 0 150	BHV AHV CU. FT	MEDIUM INDUCTION OHMM 0.2 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10
SPONTANEOUS POTENTIAL mV → ← 10	Volume Dolo/Shale	DEEP INDUCTION OHMM 0.2 2000.0	DENSITY POROSITY (2.71g/cc) PERCENT 70 30 -10 -50
TENSION LBS 10000 0	Volume Calcite	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 2000.0	PE CROSS-SECTION BARNs/ELECTRON 0 20
DENSITY (X) CALIPER INCHES (IN) 16 26 6 16	Volume Quartz		DENSITY CORRECTION G/CC -0.75 0.25
NEUTRON (Y) CALIPER INCHES (IN) 16 26 6 16			INVERSE OHMM 0 40
BIT SIZE INCHES (IN) 6 16			NORMAL OHMM 0 40
CALIPER MICRO INCHES (IN) 16 26 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 Thickness			0.250	in
Casing Correction (PHI N)			Disable	
Hole Substance			Fluid	
BHT Depth			3599.000	ft
Borehole Temperature			115.0	degF
Temperature Gradient			1.00	DFHF
Resistivity Of Mud			0.200	ohmm
MSTNG Normal Correction			-0.50	ohmm
MSTNG Inverse Correction			0.00	ohmm

* Calibration Summary *

Shop Calibration GRT-B						
Performed : 02-MAY-2017			Time : 10:27			
Sensor Suite : GR-GR5			ID : GRT-BB-009			
GR	Background	Measured Jig	Units	Calibrated Jig		Units
	46	361	CPS	175		GRAPI
Shop Calibration CNT-AA						
Performed : 20-AUG-2017			Time : 11:00			
Sensor Suite : CALI-BCN			ID : NDT-BB-123			
CL # 1	Jig - Measured Ring#1	Ring#2	Jig - Calibrated Ring#1		Ring#2	Units
	9.6	14.5	6.0		12.0	IN.
Performed : 25-Aug-2017			Time : 15:58			
Sensor Suite : BHC NEUT			ID : CNP-AA-110			
Source ID : N-1045						
N/F	Tank Measured	Calibrated	Verification Jig		Units	
	3.7302	3.6893	3.6920			
Porosity	21.1	20.5	20.5		%	
Shop Calibration LDT-DF						
Performed : 20-AUG-2017			Time : 13:01			
Sensor Suite : CALI-LTH			ID : PDT-GA-465			
CL # 1	Jig - Measured Ring#1	Ring#2	Jig - Calibrated Ring#1		Ring#2	Units
	7.8	11.2	6.0		12.0	IN.
Performed : 25-Aug-2017			Time : 11:33			
Sensor Suite : BHCPELNG			ID : LDP-DA-071			
Source ID : 2991GW						
Short Space						
	BKGD	Al	Mg	Al+Fe	Units	
LSW1	60	1072	1744	681	CPS	
LSW2	62	1245	1985	890	CPS	
LSW3	233	2803	4529	2380	CPS	
LSW4	282	2487	3618	2195	CPS	
LSW5	29	52	58	51	CPS	
LSW6	75	80	79	79	CPS	
LSW7	50	53	56	55	CPS	
LSW8	2	5	6	4	CPS	
QS	0.202	0.203	0.172	0.178		
PES			2.778	5.967		
SSDN		2.600	1.680		G/CC	
Long Space						
	BKGD	Al	Mg	Al+Fe	Units	
LLW1	88	1242	5125	753	CPS	
LLW2	97	2055	8168	1515	CPS	
LLW3	377	3622	13916	3137	CPS	
LLW4	482	1693	5380	1545	CPS	
LLW5	59	70	113	68	CPS	
LLW6	146	142	135	141	CPS	
LLW7	98	95	94	98	CPS	
LLW8	6	8	18	8	CPS	
QL	0.198	0.199	0.181	0.183		
PEL			2.697	5.458		
LSDN		2.600	1.680		G/CC	
Shop Calibration MST-DA						
Performed : 02-MAY-2017			Time : 10:17			
Sensor Suite : CALI-MSN			ID : MST-DA-025			
CL # 1	Jig - Measured Ring#1	Ring#2	Jig - Calibrated Ring#1		Ring#2	Units
	7.9	13.2	6.0		12.0	IN.
Performed : 02-May-2017			Time : 10:11			
Sensor Suite : MSTDA-NI			ID : MST-DA-025			
Internal						
INV-V	Zero	Measured Reference	Units	Calibrated Zero Reference		Units
	0.0	30518.3		0.00 1546.00		MV

NOR-V	2.7	30492.5	0.00	1546.00	MV
IN-C	1.6	58932.3	0.00	15.46	UA
INV-R				32.34	OHMM
NOR-R				55.11	OHMM
Shop Calibration PIT-CA Performed : 06-Apr-2017 Time : 11:53 Sensor Suite : P-IND-T ID : PIT-AC-043					
Medium					
	Measured		Calibrated		
	R	X	R	X	Units
Air	131483	129690	0.2	0.3	MMHOS
Zero	131071	131065	-18.1	59.8	MMHOS
Reference	244766	244496	4981.9	5059.8	MMHOS
Loop	130774	209858	3502.9	3565.2	MMHOS
Sonde Error			-1.1	-1.1	MMHOS
Cond			4981.9	5059.8	MMHOS
Deep					
	Measured		Calibrated		
	R	X	R	X	Units
Air	131855	129304	0.2	-0.3	MMHOS
Zero	131070	131072	-15.4	35.2	MMHOS
Reference	220613	224198	1984.6	2035.2	MMHOS
Loop	129592	205713	1590.6	1691.2	MMHOS
Sonde Error			-0.8	-4.7	MMHOS
Cond			1984.6	2035.2	MMHOS
Temperature					
	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF
Performed : 06-Apr-2017 Time : 11:44 Sensor Suite : SFL ID : PIT-AC-043					
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32733.9	48917.0	0.0	7028.0	uA
Ib	32768.1	49665.3	0.0	1750.0	mA
MOM1	32717.2	56263.0	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 06-Apr-2017 Time : 11:41 Sensor Suite : P-SP ID : PIT-AC-043					
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32773.9	58934.6	0.0	1000.0	mV



Tucker
ENERGY SERVICES

Company: VAL ENERGY INC.
 Well: THELMA #1-24
 Location: 2310' FSL & 2970' FEL
 Logged: 09-08-2017
 K.B. Elev: 1295.0 Ft