

Tucker

WIRELINER SERVICES

COMPENSATED NEUTRON
PEL DENSITY MICRO LOG

Company C&G DRILLING Well HITE #1 Field DEBOIS County SEGWICK State KANSAS Country USA API No. 15-173-21014-0000		File No : TUL-58680 Company : C&G DRILLING Well : HITE #1 Field : DEBOIS County : SEGWICK State : KANSAS Country : USA API No : 15-173-21014-0000	
Location : 860' FNL & 1020' FEL NW SW NE NE		LSD : Sect : 3 Twp : 25S Rge : 2E	
Permanent Datum:	GL	Elevations:	Services:
Drilling Measured From:	KB	KB 1361.00	CNT
Log Measured From:	KB	DF 1360.00	LDT
Above Permanent Datum:	6.00 Ft	GL 1354.00	MLT
Date	2012-08-28		
Run Number	1		
Depth--Driller	3290.0 Ft		
Depth--Logger	3290.0 Ft		
First Reading	3268.0 Ft		
Last Reading	200.0 Ft		
Casing--Driller	200.0 Ft		
Casing--Logger	200.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	CHEM-GEL		
Density	9.3 LBS/GAL		
Fluid Loss	9.6 CC		
PH/Viscosity	8.8 56.0 SEC		
Sample Source	MEASURED		
RM@Measured Temp.	0.550 @ 80 F		
RMF@Measured Temp	0.440 @ 80 F		
RM@Measured Temp.	0.660 @ 80 F		
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.410 @ 109 F		
Time Circulation Stopped	2012-08-28 02:33		
Max Recorded Temp.	109 F		
Equipment/Base	TRK 127 TULSA		
Recorded By	SHELDON TYLER		
Witnessed By	T. GULLICK		

The customer is hereby warned that by providing the log data herein, Tucker Technologies, Inc. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. Tucker Technologies, Inc. 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 Tucker Technologies, Inc. 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 Tucker Technologies, Inc. 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	3290.00	8.625	32.00	200.00

Run Number	1	
Date	2012-08-28	
Date/Time On Bottom	2012-08-28 04:33	
Depth to Fluid	0.0 Ft	
Salinity	0.000 PPM	
RMF@BHT	0.330 @ 109 F	
RMC@BHT	0.500 @ 109 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 UISING 5.500" PRODUCTION CASING.

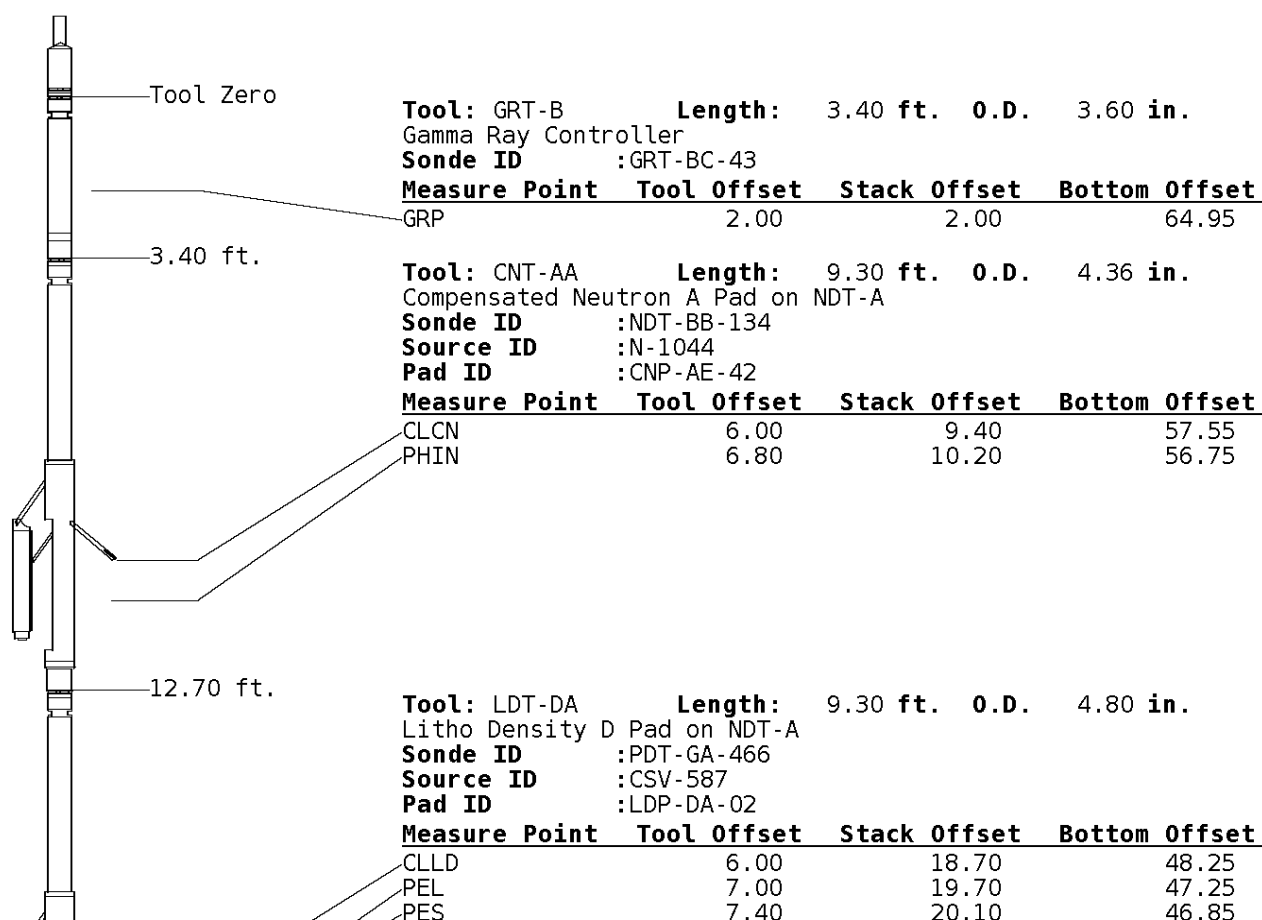
DETAIL 2300 CUSTOMER REQUEST

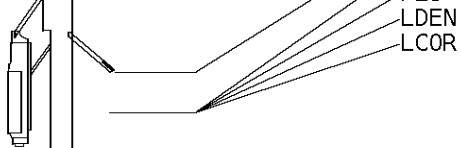
GRT: GRP.
 CNT: PHIN, CLCNIN
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN.
 MLT: NOR_R, INV_R, MSCLPIN.
 CST: PORS, DDCDTE, TT1PF, TT3PF, ITT.
 PIT: ILD, ILM, SPU, SFLAEC

OPERATORS:
 A.DJAH
 Z.HICKMAN
 J.THOMAS

Tool String Schematic

Total Tool Length - 66.95 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1171.00 lbs.



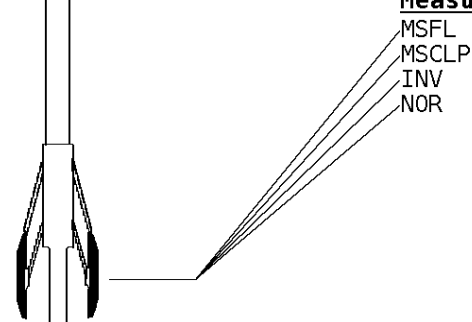


LDEN	7.20	19.90	47.05
LCOR	7.20	19.90	47.05

22.00 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
Micro Spherically Focused (IC)
Sonde ID :MLT-DA-21

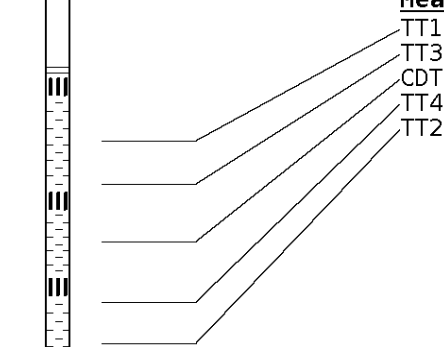
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	37.35
MSCLP	7.60	29.60	37.35
INV	7.60	29.60	37.35
NOR	7.60	29.60	37.35



31.66 ft.

Tool: CST-AD **Length:** 13.80 ft. **O.D.** 3.60 in.
Open Hole Sonic
Sonde ID :CST-AB-38

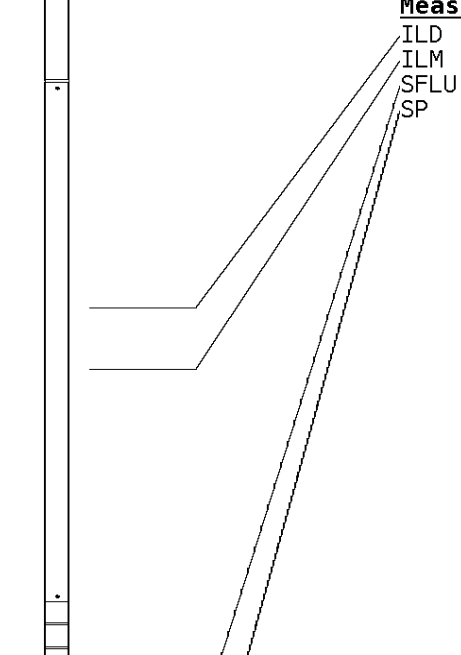
Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	36.46	30.49
TT3	5.80	37.46	29.49
CDT	7.30	38.96	27.99
TT4	8.80	40.46	26.49
TT2	9.80	41.46	25.49



45.46 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
Phased Dual Induction w/ RM & D
Sonde ID :PIT-AC-13

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	54.38	12.56
ILM	10.10	55.56	11.39
SFLU	17.49	62.95	4.00
SP	20.60	66.06	0.88



LWT 66.95 ft.

Well File: CG DRILLING HITE 1 AUG28 QUINT

Scale: 1:240

Segment: V1.D1.S3 Reprocess of MAIN NO CST

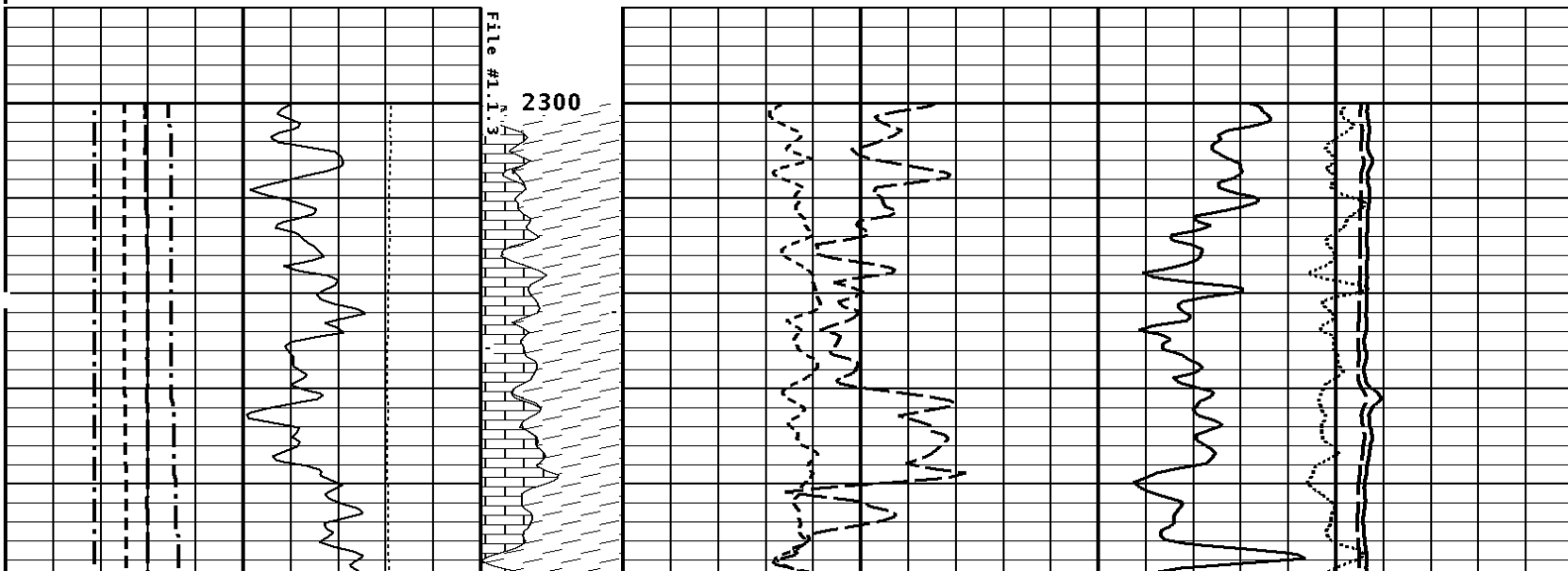
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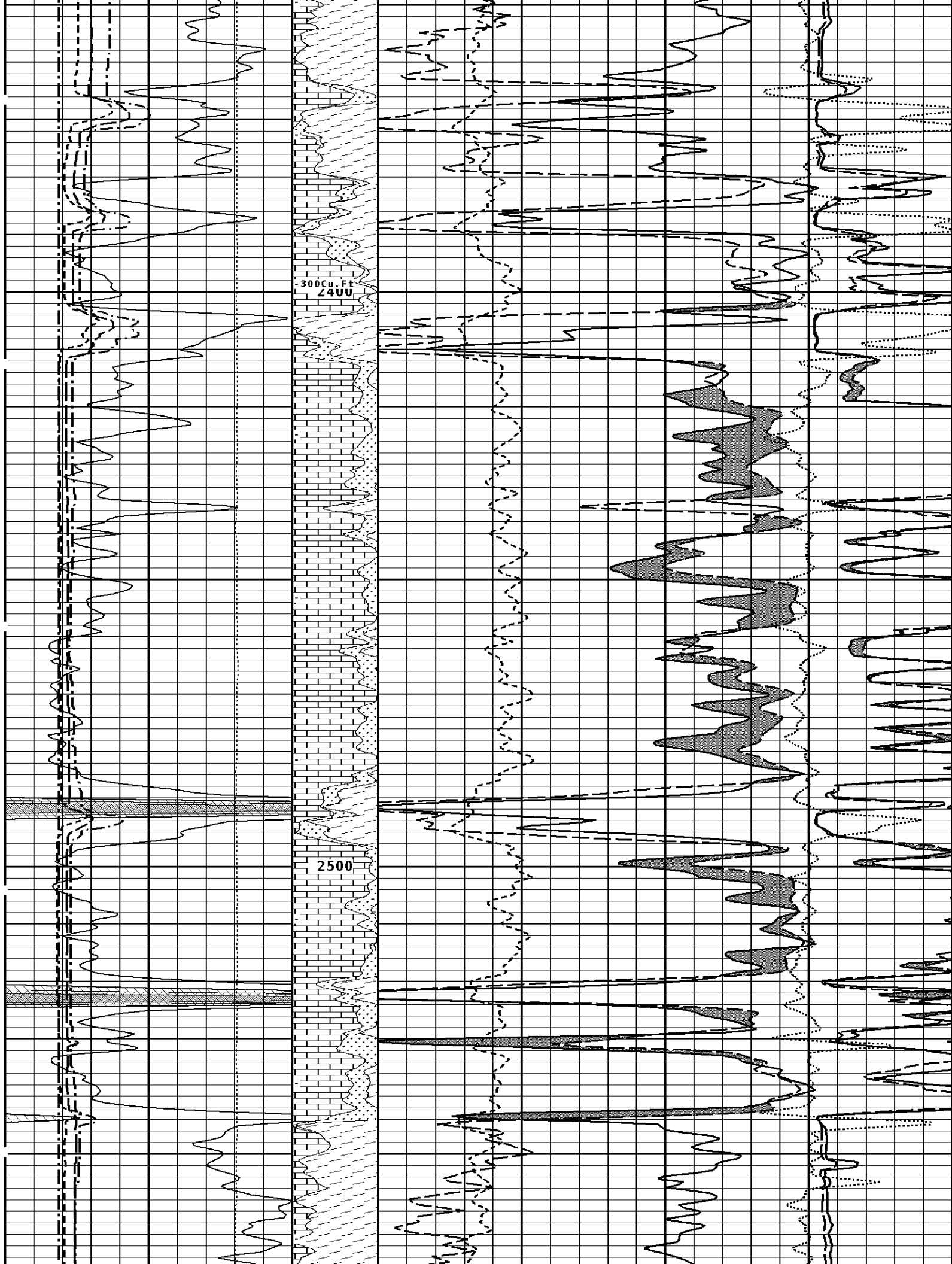
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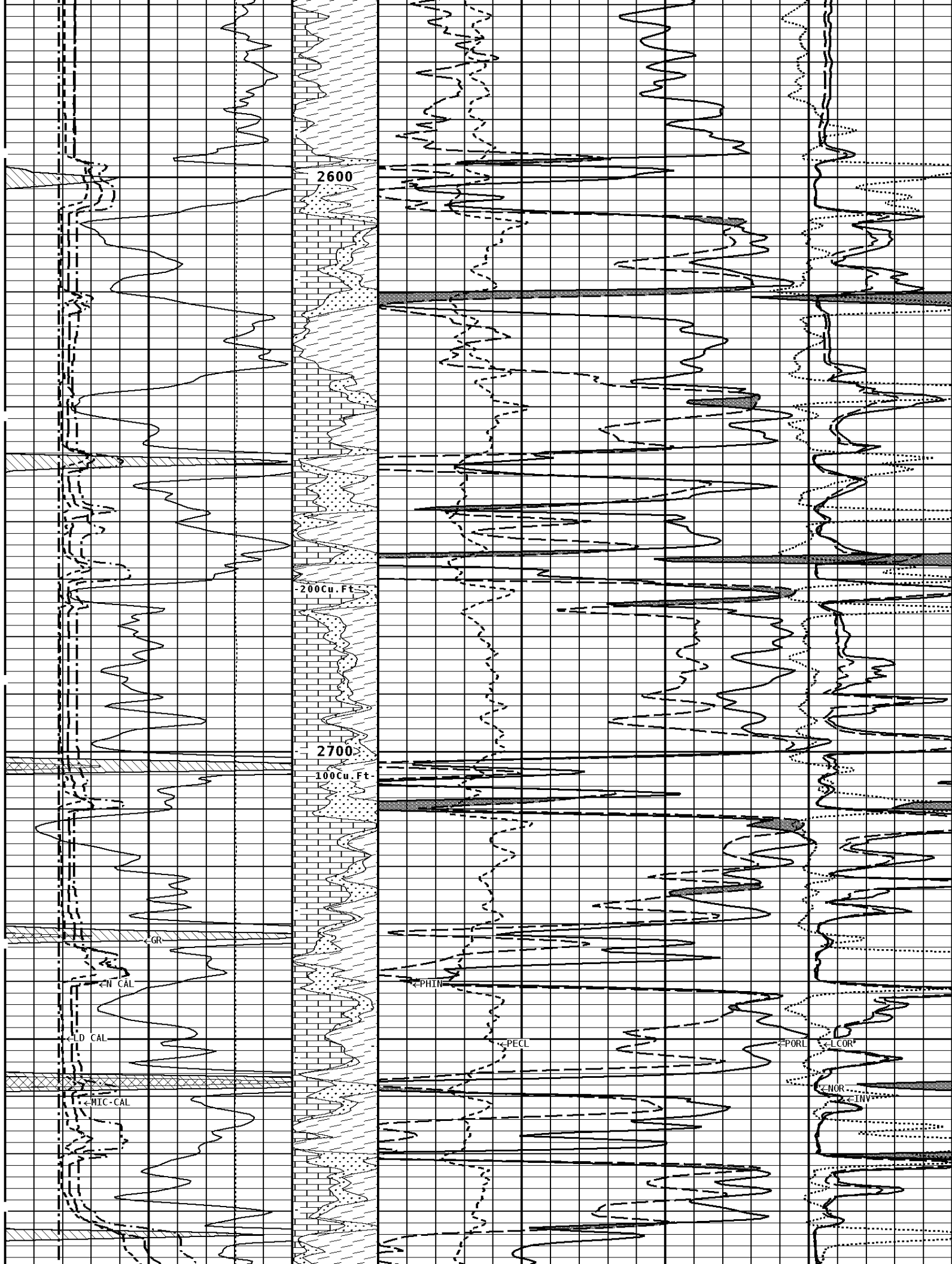
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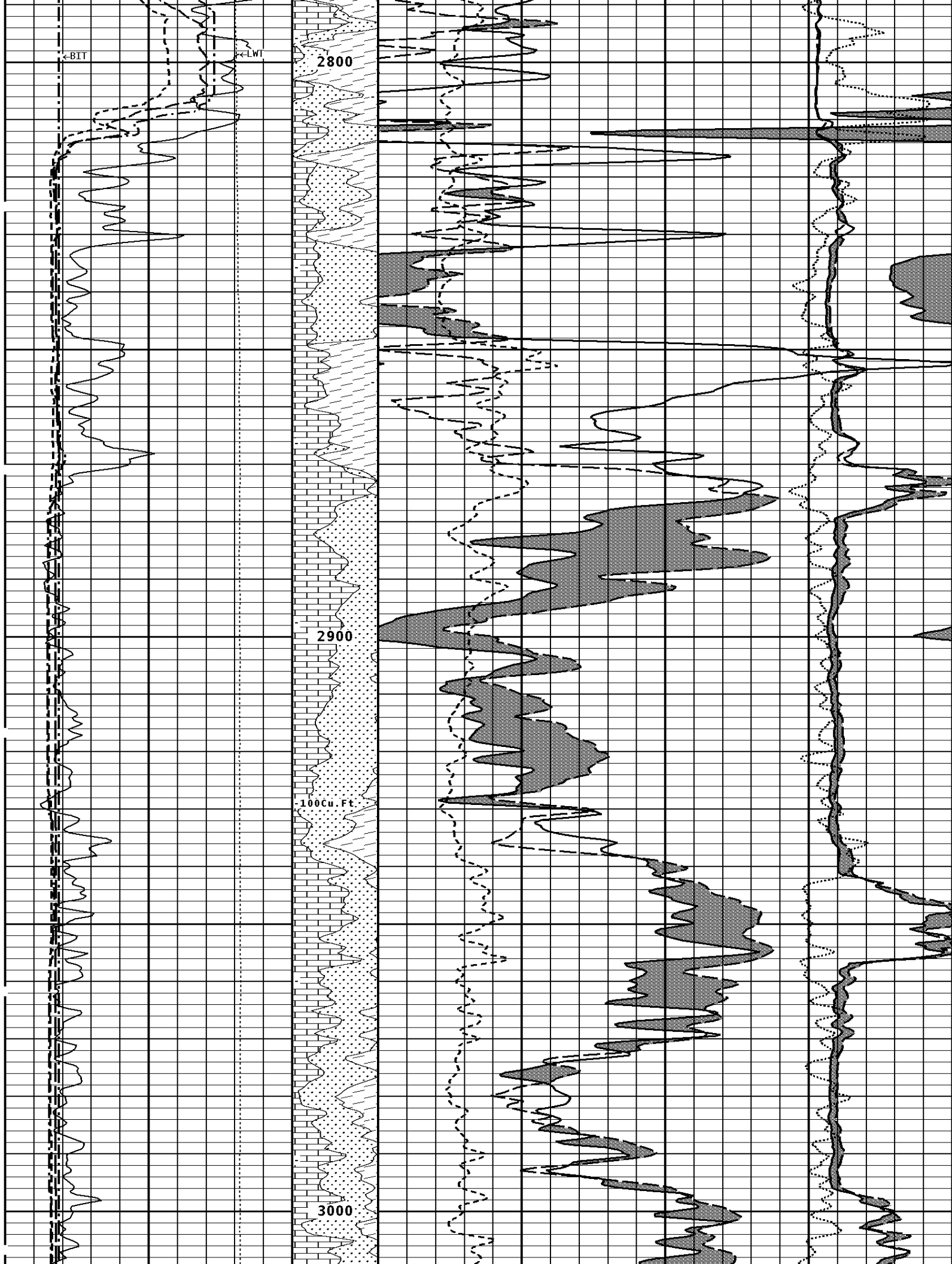
CALIPER MICRO INCHES (IN)					
16 6	26 16				
TENSION LBS				MICRO-INVERSE OHMM	
100000				040	
BIT SIZE INCHES (IN)		Volume Dolo/Shale			MICRO-NORMAL OHMM
6	16				040
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC	
16 6	26 16		010	-0.250.25	
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)		
16 6	26 16		30-10		
GAMMA RAY API UNITS		- BHV AHV - CU. FT	DENSITY POROSITY PERCENT (2.71 g/cc)		
150 0	300 150		70 30 -10	30 -10 -50	

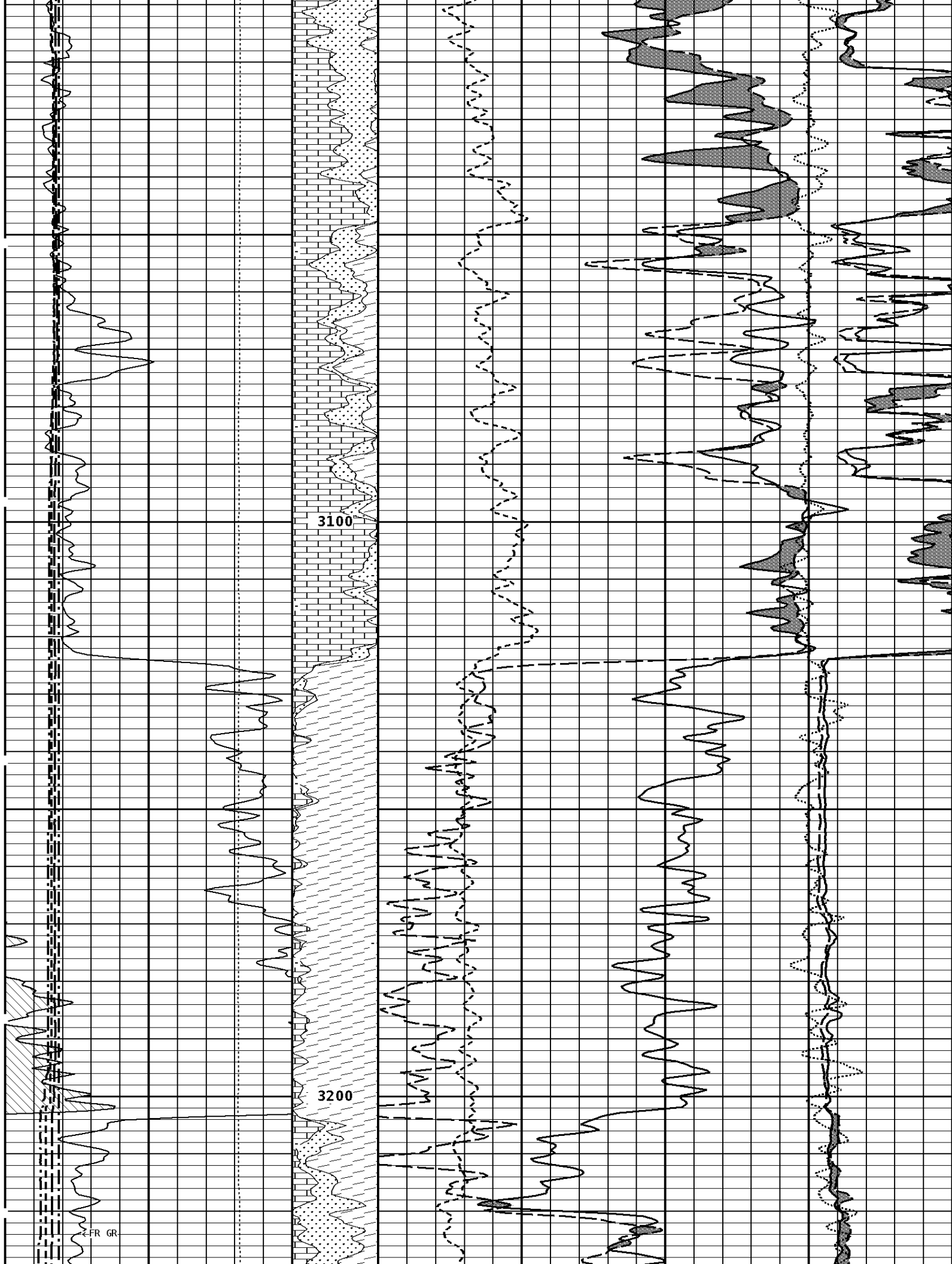
1:240 MAIN SECTION

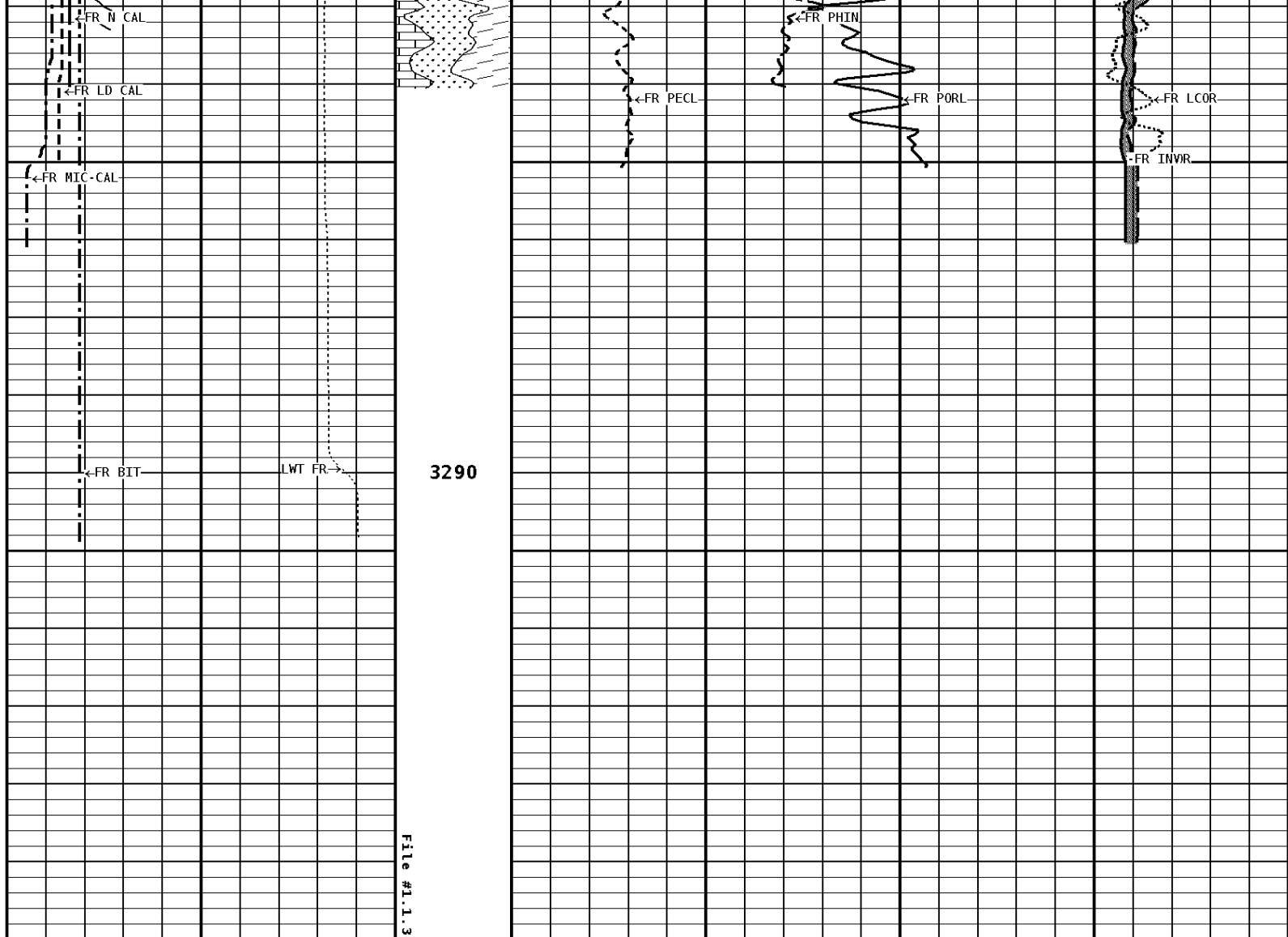












1:240 MAIN SECTION

GAMMA RAY API UNITS		- BHV AHV - CU. FT	DENSITY POROSITY PERCENT (2.71 g/cc)		
150	300		70	30	
0	150		30	-10	
			-10	-50	
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)		
16	26				
6	16		30	-10	
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC	
16	26		0	10	
6	16		-0.25	0.25	
BIT SIZE INCHES (IN)		Volume Dolo/Shale	MICRO-NORMAL OHMM		
6	16				
			0	40	
TENSION LBS			MICRO-INVERSE OHMM		
10000	0				
			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 Correction (PHI N) _____ Disable

Well File: CG DRILLING HITE 1 AUG28 QUINT

Scale: 1:240

Segment: V1.D1.S7 REPEAT CMAIN NO CST

Acquired: Not Available

Reference: 0

Processed: Not Available

**CALIPER MICRO
INCHES (IN)**

16 26
6 16

**TENSION
LBS**

10000 0

**BIT SIZE
INCHES (IN)**

6 16

Volume
Dolo/Shale



**MICRO-INVERSE
OHMM**

0 40

**MICRO-NORMAL
OHMM**

0 40

**DENSITY (X) CALIPER
INCHES (IN)**

16 26
6 16

Volume
Quartz



**PE CROSS-SECTION
BARNs/ELECTRON**

0 10

**DENSITY CORRECTION
G/CC**

-0.25 0.25

**NEUTRON (Y) CALIPER
INCHES (IN)**

16 26
6 16

Volume
Calcite



**NEUTRON POROSITY
PERCENT (LIMESTONE MATRIX)**

30 -10

**GAMMA RAY
API UNITS**

150 300
0 150

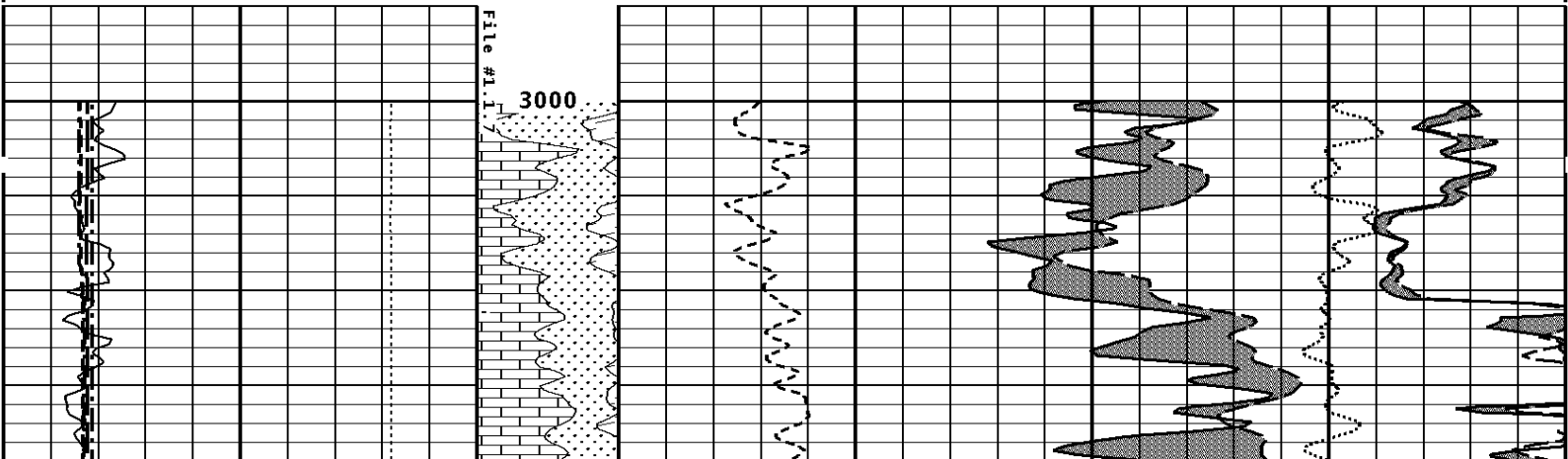
-BHV AHV-
CU.FT

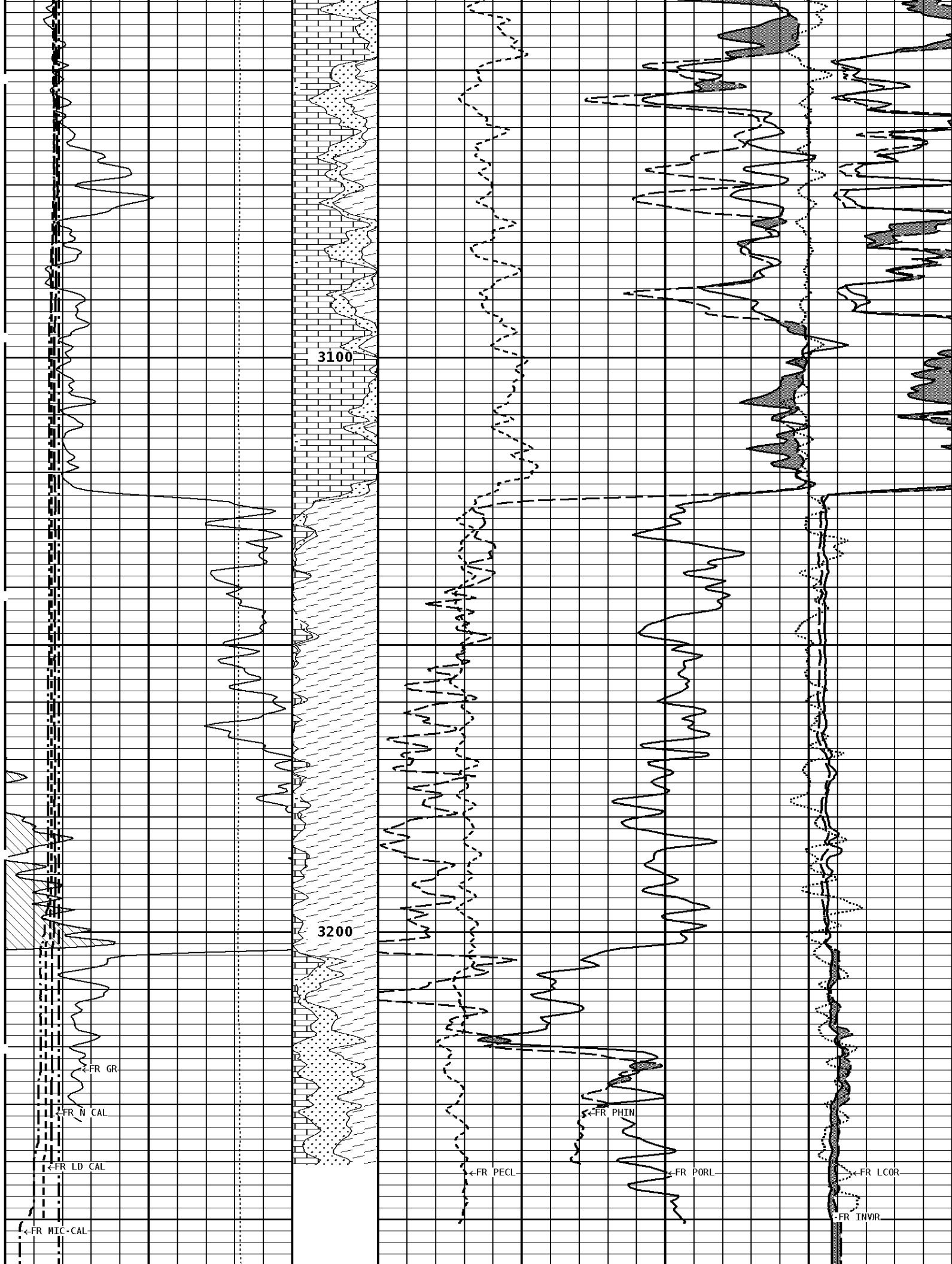


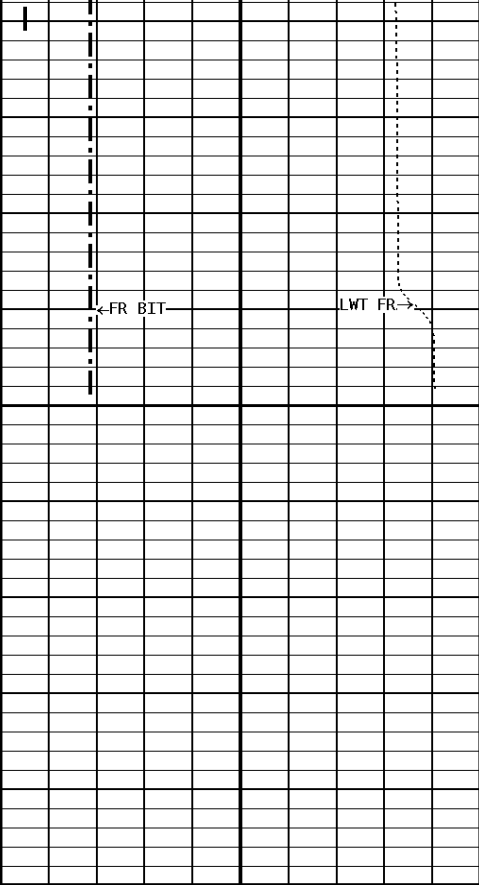
**DENSITY POROSITY
PERCENT (2.71 g/cc)**

70 30
30 -10
-10 -50

1:240 REPEAT SECTION







3290

File #1.1.7

1:240 REPEAT SECTION

GAMMA RAY API UNITS		-BHV AHV- CU.FT	DENSITY POROSITY PERCENT (2.71 g/cc)		
150	300		70	30	
0	150		30	-10	
			-10	-50	
NEUTRON (Y) CALIPER INCHES (IN)		Volume Calcite	NEUTRON POROSITY PERCENT (LIMESTONE MATRIX)		
16	26		30	-10	
6	16				
DENSITY (X) CALIPER INCHES (IN)		Volume Quartz	PE CROSS-SECTION BARNs/ELECTRON	DENSITY CORRECTION G/CC	
16	26		0	10	
6	16		-0.25	0.25	
BIT SIZE INCHES (IN)		Volume Dolo/Shale	MICRO-NORMAL OHMM		
6	16		0		
			40		
TENSION LBS			MICRO-INVERSE OHMM		
10000	0		0		
			40		
CALIPER MICRO INCHES (IN)					
16	26				
6	16				

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet

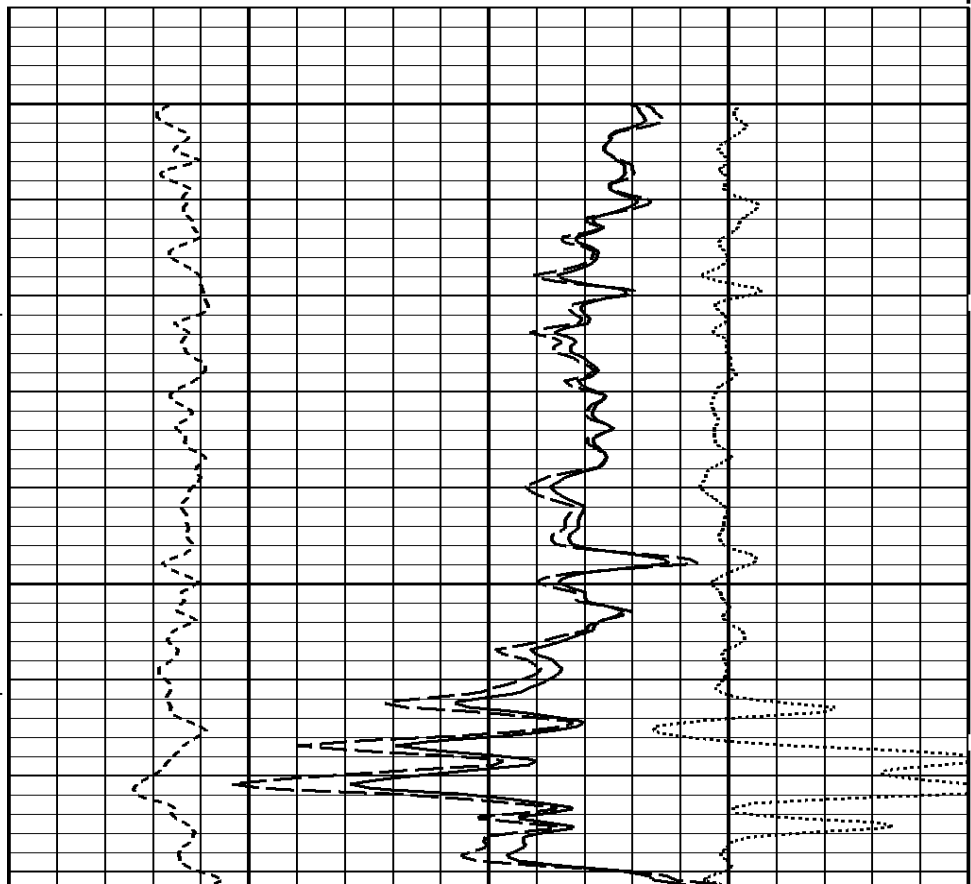
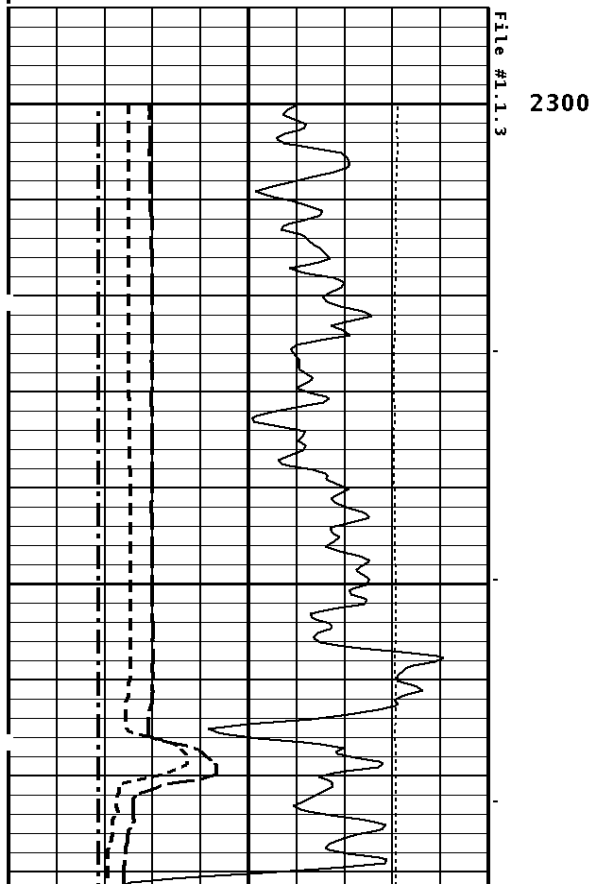
Matrix Density	2.71	g/cc
Fluid Density	1.00	g/cc
Formation Matrix	Limestone	
Drill Bit Size	7.875	in
Casing Diameter	5.500	in
Casing Correction (PHI N)	Disable	

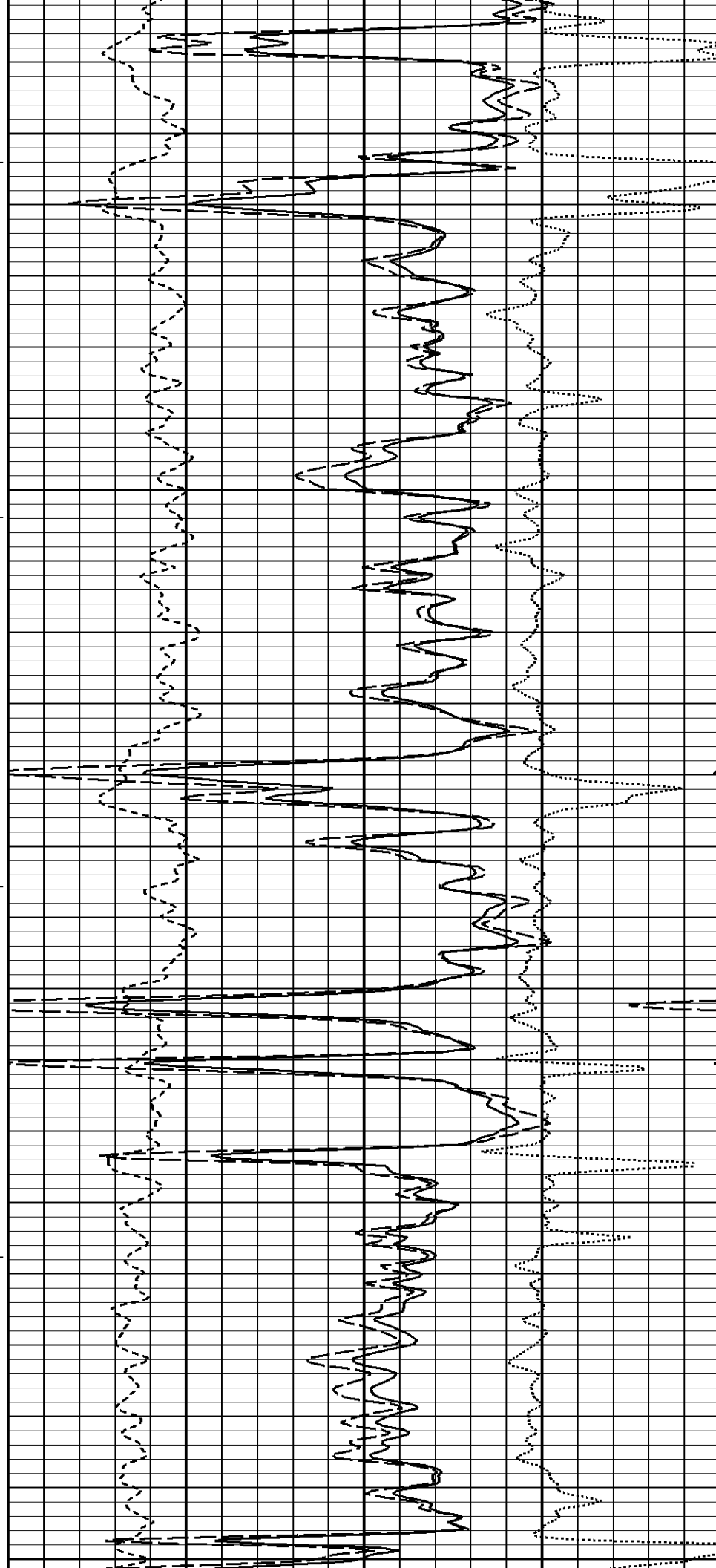
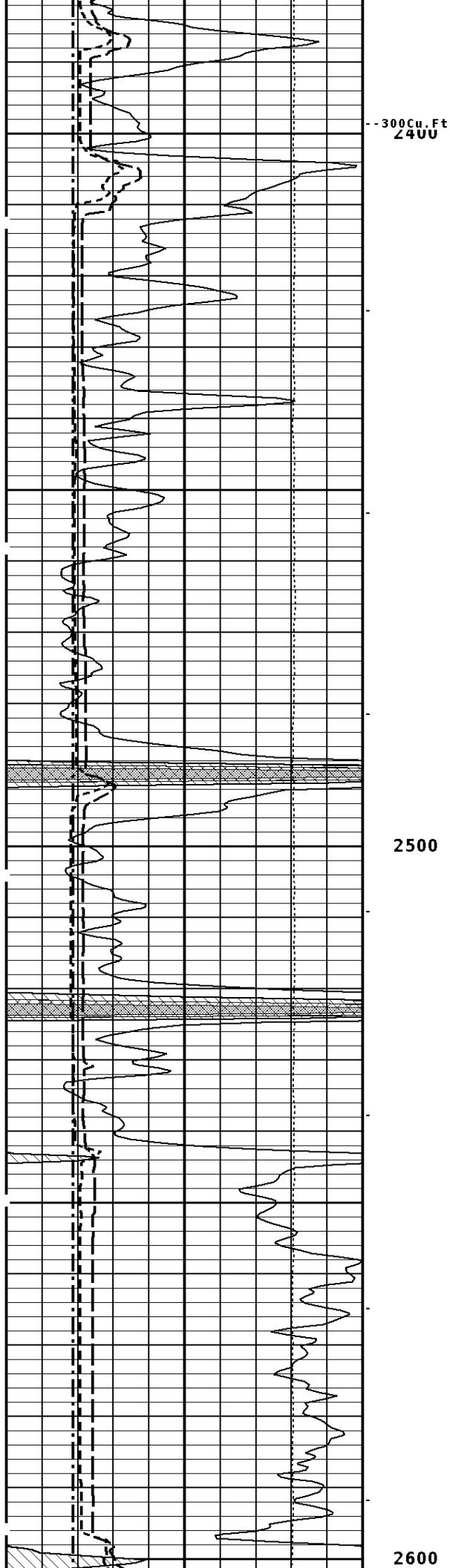
Well File: CG DRILLING HITE 1 AUG28 QUINT
Segment: V1.D1.S3 Reprocess of MAIN N0 CST
Reference: 0

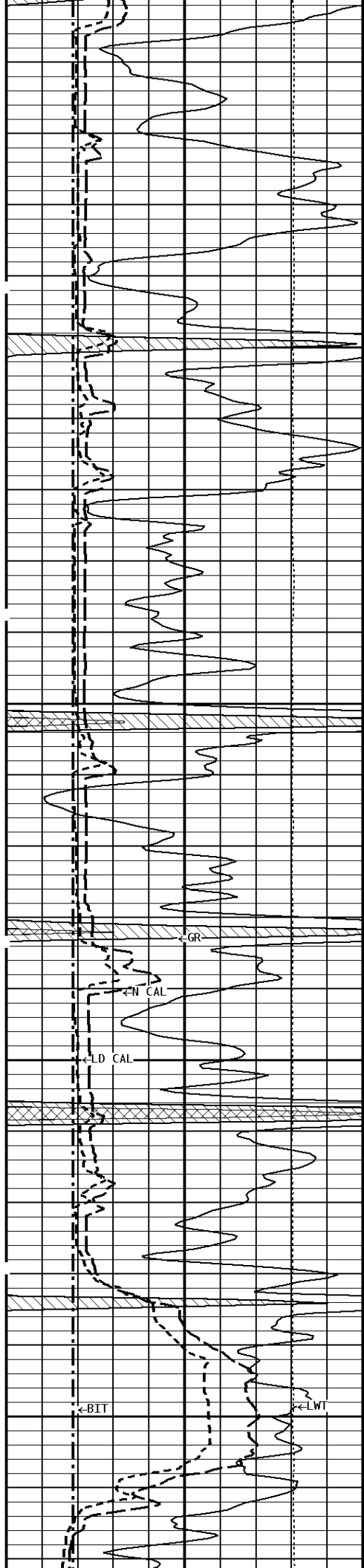
Scale: 1:240
Acquired: 2012-08/28 05:40 3.2.0-11172
Processed: 2012-08/28 06:43 3.2.0-11172

TENSION LBS			
10000	0		
BIT SIZE INCHES (IN)			
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		
NEUTRON (Y) CALIPER INCHES (IN)		DENSITY POROSITY PERCENT (2.71 g/cc)	
16	26	70	30
6	16	30	-10
		-10	-50
GAMMA RAY API UNITS		COMPENSATED BULK DENSITY G/CC	
150	300	3.0	4.0
0	150	2.0	3.0
		1.0	2.0

1:240 MAIN SECTION BULK DENSITY





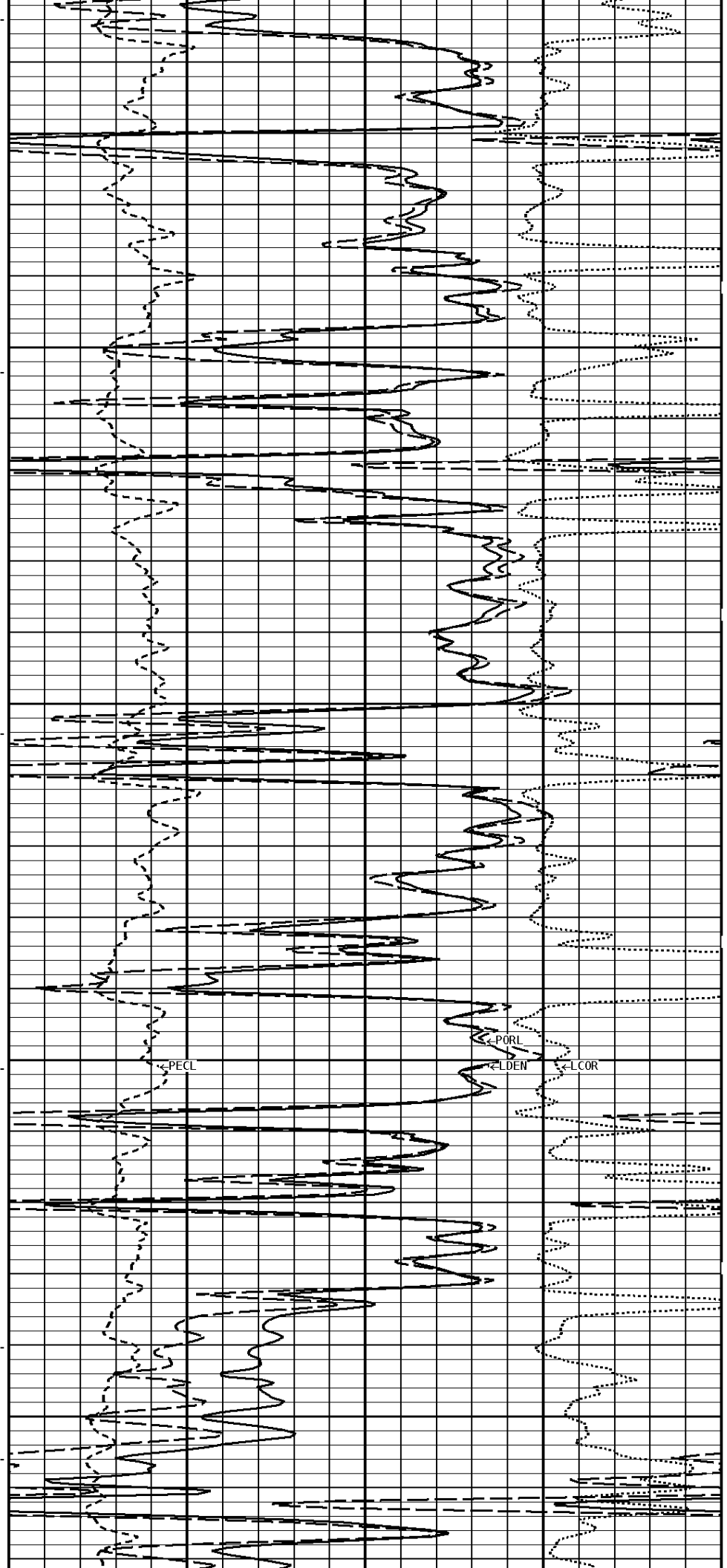


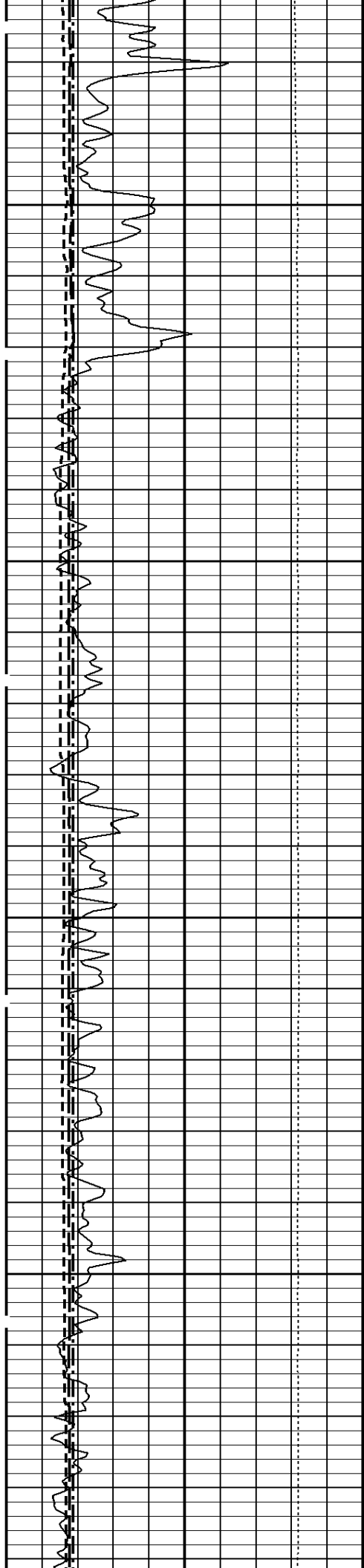
--200Cu.Ft

2700

100Cu.Ft--

2800

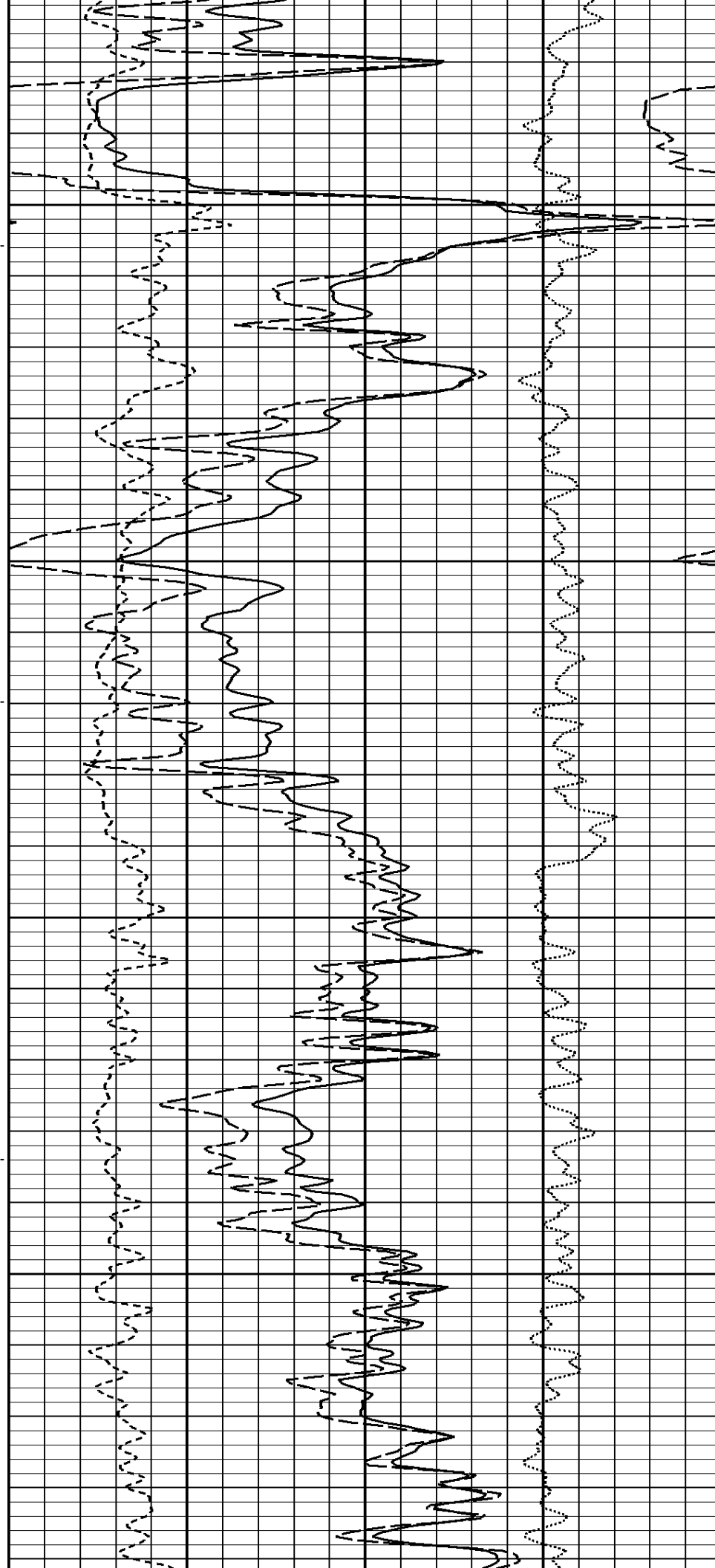


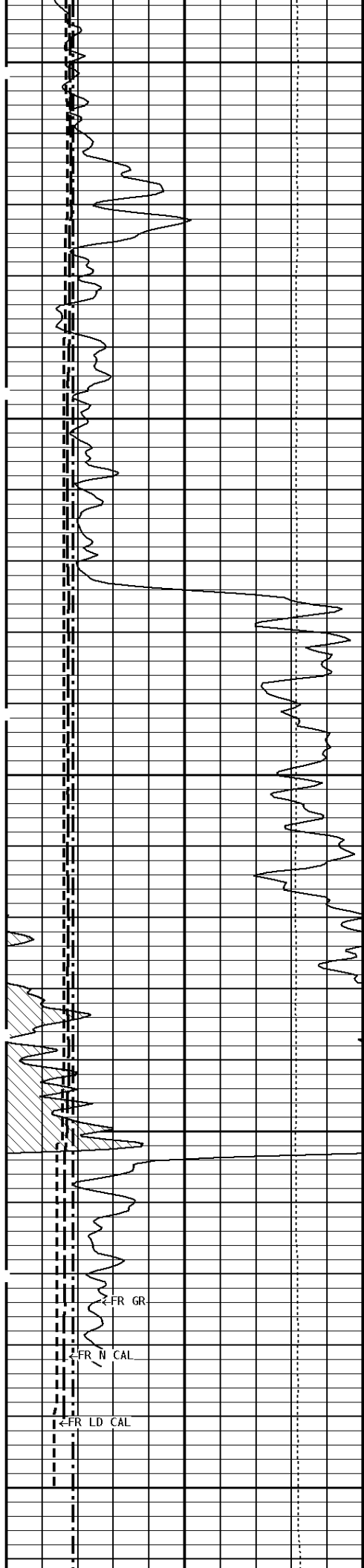


2900

--100Cu. Ft

3000

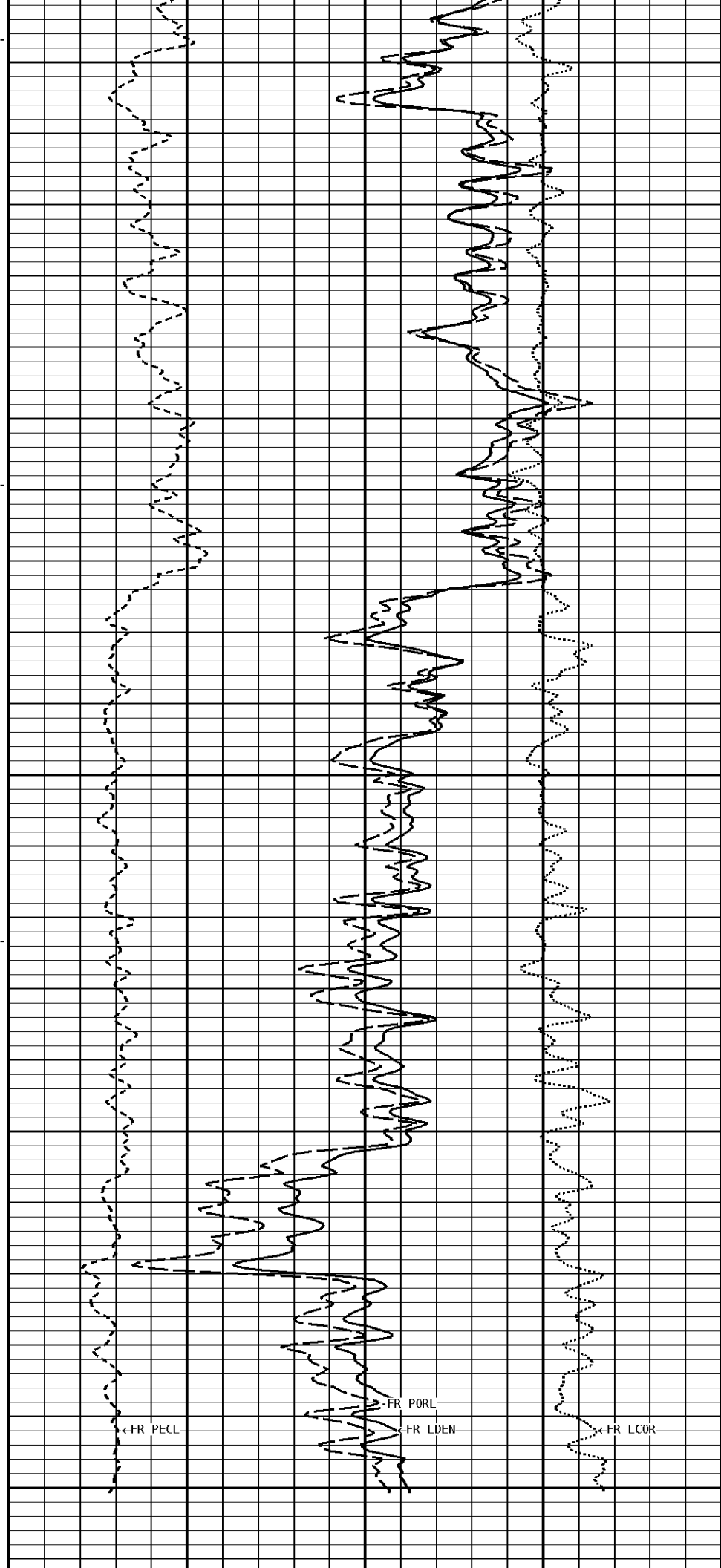




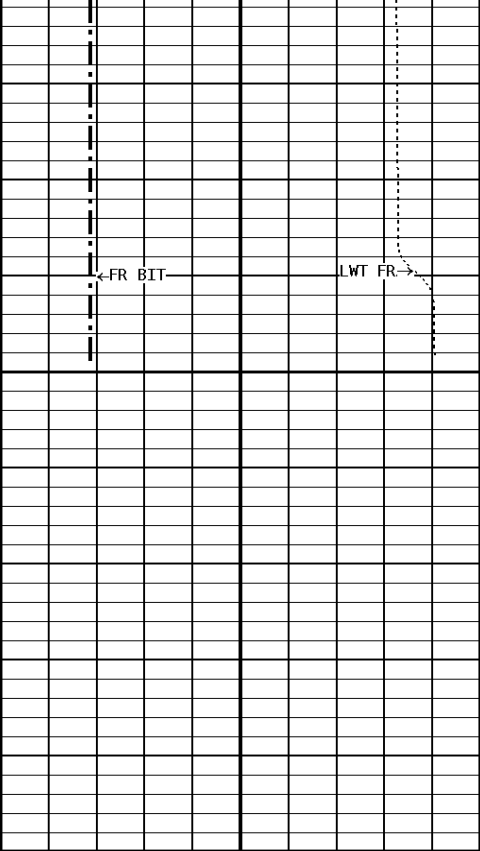
3100

3200

←FR GR
←FR N CAL
←FR LD CAL



←FR PECL
←FR PORL
←FR LDEN
←FR LCOR



3290

File #1.1.3

1:240 MAIN SECTION BULK DENSITY

GAMMA RAY API UNITS		-BHV AHV- CU. FT	COMPENSATED BULK DENSITY G/CC		
150	300		3.0	4.0	
0	150		2.0	3.0	
			1.0	2.0	
NEUTRON (Y) CALIPER INCHES (IN)			DENSITY POROSITY PERCENT (2.71 g/cc)		
16	26		70	30	
6	16		30	-10	
			-10	-50	
DENSITY (X) CALIPER INCHES (IN)			PE CROSS-SECTION BARN/ ELECTRON	DENSITY CORRECTION G/CC	
16	26		0	10	-0.25
6	16				0.25
BIT SIZE INCHES (IN)					
6	16				
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	7.875	in
Casing Diameter	5.500	in
Casing Correction (PHI N)	Disable	

*** Calibration Summary ***

Shop Calibration					
GRT-B					
Performed : 12-Jul-2012			Time : 09:53		
Sensor Suite : GR-GR5			ID : GRT-BC-43		
	Measured	Units	Calibrated	Units	
	Background	Jig	Jig		
GR	46	309	175		GRAPI
Shop Calibration					
CNT-AA					
Performed : 30-JUL-2012			Time : 14:31		
Sensor Suite : CALI-BCN			ID : NDT-BB-134		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	11.4	17.4	6.0	12.0	IN.
Shop Calibration					
BHC NEUT					
Performed : 30-Jul-2012			Time : 14:05		
Sensor Suite : BHC NEUT			ID : CNP-AE-42		
Source ID : N-1044					
	Tank		Verification	Units	
	Measured	Calibrated	Jig		
N/F	3.5672	3.6893	3.6958		
Porosity	18.7	20.5	20.6		%
Shop Calibration					
LDT-DA					
Performed : 10-APR-2011			Time : 19:51		
Sensor Suite : CALI-LTH			ID : PDT-GA-466		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	6.7	12.7	6.0	12.0	IN.
Shop Calibration					
BHCPELNG					
Performed : 02-Jul-2012			Time : 12:48		
Sensor Suite : BHCPELNG			ID : LDP-DA-02		
Source ID : CSV-587					
	Short Space				
	BKGD	Al	Mg	Al+Fe	Units
LSW1	68	440	697	299	CPS
LSW2	72	538	842	390	CPS
LSW3	274	1336	2091	1161	CPS
LSW4	351	1292	1780	1168	CPS
LSW5	33	43	44	41	CPS
LSW6	91	90	91	92	CPS
LSW7	56	58	58	59	CPS
LSW8	2	3	3	2	CPS
QS	0.237	0.217	0.218	0.217	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
	Long Space				
	BKGD	Al	Mg	Al+Fe	Units
LLW1	105	567	2305	367	CPS
LLW2	115	969	3962	718	CPS
LLW3	429	1925	7013	1701	CPS
LLW4	571	1141	2882	1069	CPS
LLW5	63	66	80	66	CPS
LLW6	184	182	173	182	CPS
LLW7	117	114	112	115	CPS
LLW8	4	5	9	5	CPS
QL	0.224	0.230	0.216	0.227	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC
Shop Calibration					
MST-DA					
Performed : 30-JUL-2012			Time : 14:56		
Sensor Suite : CALI-MSN			ID : MLT-DA-21		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1	Ring#2	Ring#1	Ring#2	
CL # 1	6.6	11.0	6.0	12.0	IN.
Shop Calibration					
MSTDA-NI					
Performed : 12-Jul-2012			Time : 10:32		
Sensor Suite : MSTDA-NI			ID : MLT-DA-21		
Internal					

Measured				Calibrated			
	Zero	Reference	Units	Zero	Reference	Units	
INV-V	0.0	29787.6		0.00	1946.00	MV	
NOR-V	18.9	30109.6		0.00	1546.00	MV	
IN-C	0.0	60619.2		0.00	15.46	UA	
INV-R					40.71	OHMM	
NOR-R					55.11	OHMM	
Performed : 12-Jul-2012				Time : 10:35			
Sensor Suite : MSTDAMSF				ID : MLT-DA-21			
Internal				Calibrated			
	Zero	Measured Reference	Units	Zero	Reference	Units	
MSFC	15.0	42170.2		0.00	1522.00	UA	
MSFB	32729.5	54955.1		0.00	1522.00	MA	
MOM1	0.0	43114.6		0.00	1522.00	MV	
MSFRA					43.30	OHMM	



Tucker
WIRELINE SERVICES

Company: C&G DRILLING
 Well: HITE #1
 Location: 860' FNL & 1020' FEL
 Logged: 2012-08-28
 K.B. Elev: 1361.0