

STEP

COMPOSITE LOG

Company CASILLAS PETROLEUM CORP Well HAMKER #20-3 Field LETTE County HASKELL State KANSAS Country USA API No. 15-081-22204-00-00										File No : HAYS-70387 Company : CASILLAS PETROLEUM CORP Well : HAMKER #20-3 Field : LETTE County : HASKELL State : KANSAS Country : USA API No : 15-081-22204-00-00									
Location : 1420' FSL & 660' FWL S/2 S/2 NW SW																			
LSD :										Sect : 20 Twp : 30S Rge : 31W									
Permanent Datum:		GL		Elevations:		Services:													
Drilling Measured From:		KB		KB 2858.00		Ft		CNT		CST									
Log Measured From:		KB		DF 2857.00		Ft		LDT		PIT									
Above Permanent Datum:		0.00 Ft		GL 2846.00		Ft													
Date		12-07-2019																	
Run Number		1																	
Depth--Driller		5721.0 Ft																	
Depth--Logger		5716.0 Ft																	
First Reading		5715.0 Ft																	
Last Reading		1832.0 Ft																	
Casing--Driller		1823.0 Ft																	
Casing--Logger		1826.0 Ft																	
Bit Size		7.875 In																	
Casing Size		8.625 In																	
Hole Fluid Type		WBM																	
Density		9.3																	
Fluid Loss		4.6																	
PH/Viscosity		11.0		57.0															
Sample Source		MEASURED																	
RM@Measured Temp.		2.000 @ 60 F																	
RMF@Measured Temp.		0.850 @ 60 F																	
RMC@Measured Temp.		1.150 @ 60 F																	
Source RMF/RMC		CALCULATED CALCULATED																	
RM@BHT		1.000 @ 125 F																	
Time Circulation Stopped		12-07-2019 03:00																	
Max Recorded Temp.		125		F															
Equipment/Base		TRK-137		HAYS															
Recorded By		B.BAILEY																	
Witnessed By		DAVID																	

The customer is hereby warned that by providing the log data herein, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services 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 STEP Energy Services 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 STEP Energy Services 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)	Top (Ft)
7.875	5721.00	8.625	32.00	1832.00	0.00

Run Number	1		
Date	12-07-2019		
Date/Time On Bottom	12-07-2019 09:45		
Depth to Fluid	0.0 Ft		
Salinity	0.000		
RMF@BHT	0.850 @ 125 F		
RMC@BHT	1.150 @ 125 F		

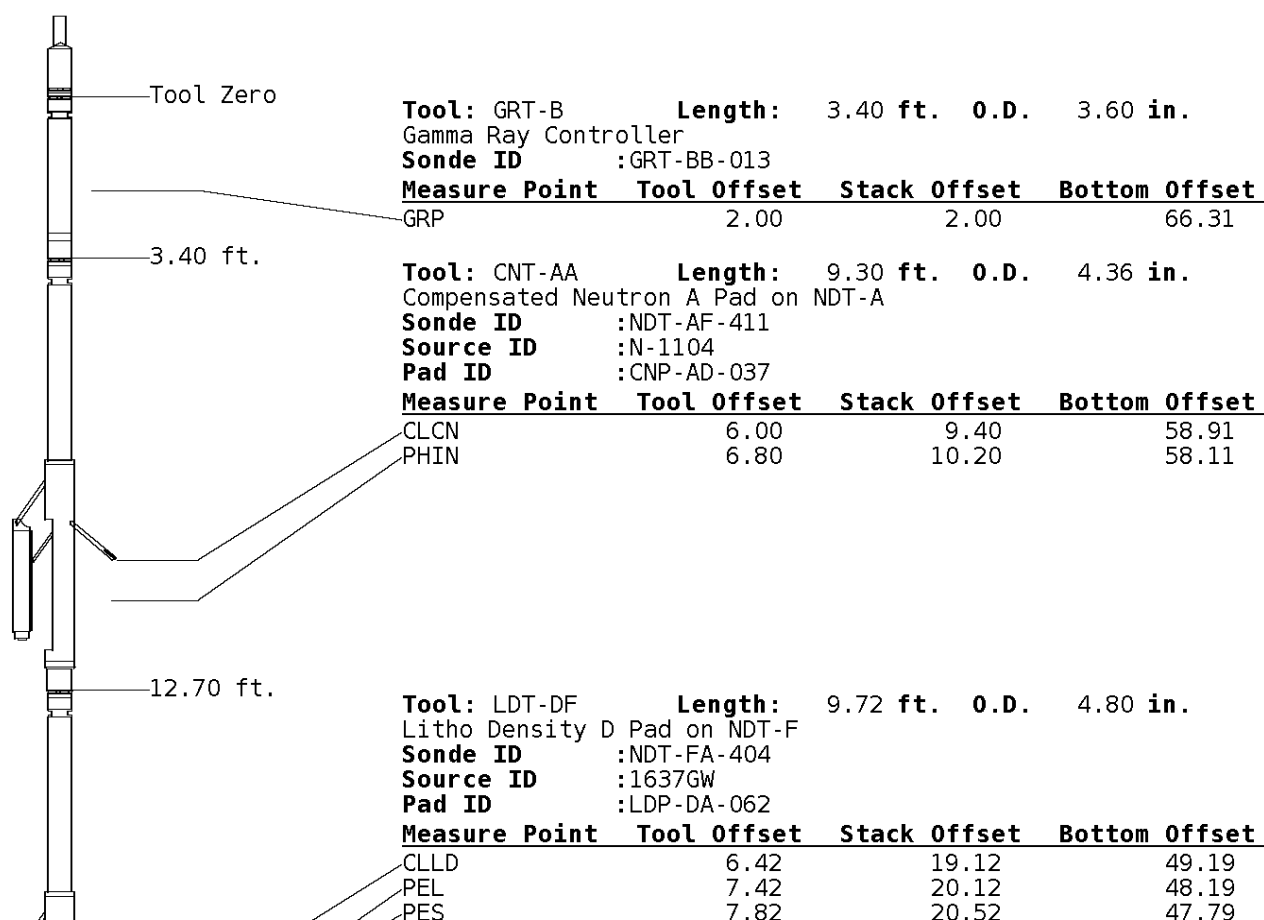
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT, CST, AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED

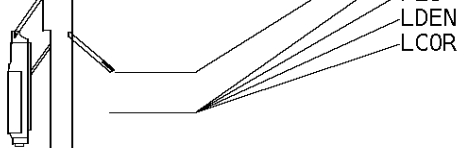
GRT: GRP.
 CNT: PHIN, CLCNIN.
 LDT: PORL, LCORN, PECLN, LDENN, CLLDIN.
 MLT: NOR_RF, INV_RF, MSCLPIN.
 CST: PORS, ITT, CDTF, TT1, TT2, TT3, TT4.
 PIT: ILD, ILM, SFLAEC, CIRD, SPU

OPERATORS:

Tool String Schematic

Total Tool Length - 68.31 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1171.00 lbs.



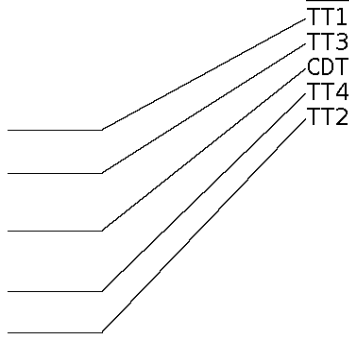


7.62	20.32	47.99
7.62	20.32	47.99

22.42 ft.

Tool: CST-AD **Length:** 13.80 ft. **O.D.** 3.60 in.
Open Hole Sonic
Sonde ID : CST-AB-24

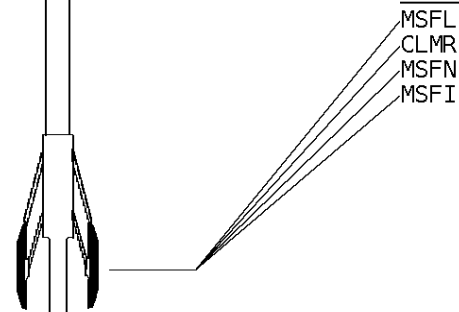
Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	27.22	41.09
TT3	5.80	28.22	40.09
CDT	7.30	29.72	38.59
TT4	8.80	31.22	37.09
TT2	9.80	32.22	36.09



36.22 ft.

Tool: MLT-AB **Length:** 10.60 ft. **O.D.** 6.00 in.
Micro Log Tool
Sonde ID : MLT-012

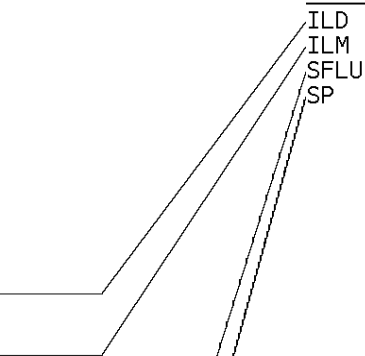
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	8.90	45.12	23.19
CLMR	7.60	43.82	24.49
MSFN	8.90	45.12	23.19
MSFI	8.90	45.12	23.19



46.82 ft.

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	55.74	12.56
ILM	10.10	56.92	11.39
SFLU	17.49	64.31	4.00
SP	20.60	67.42	0.88



LWT 68.31 ft.

Well File: casillas hamker 20-3 dec-7-2019_qst

Scale: 1:240

Format: COMSAT

Segment: V1.D1.S7 Reprocess MAIN

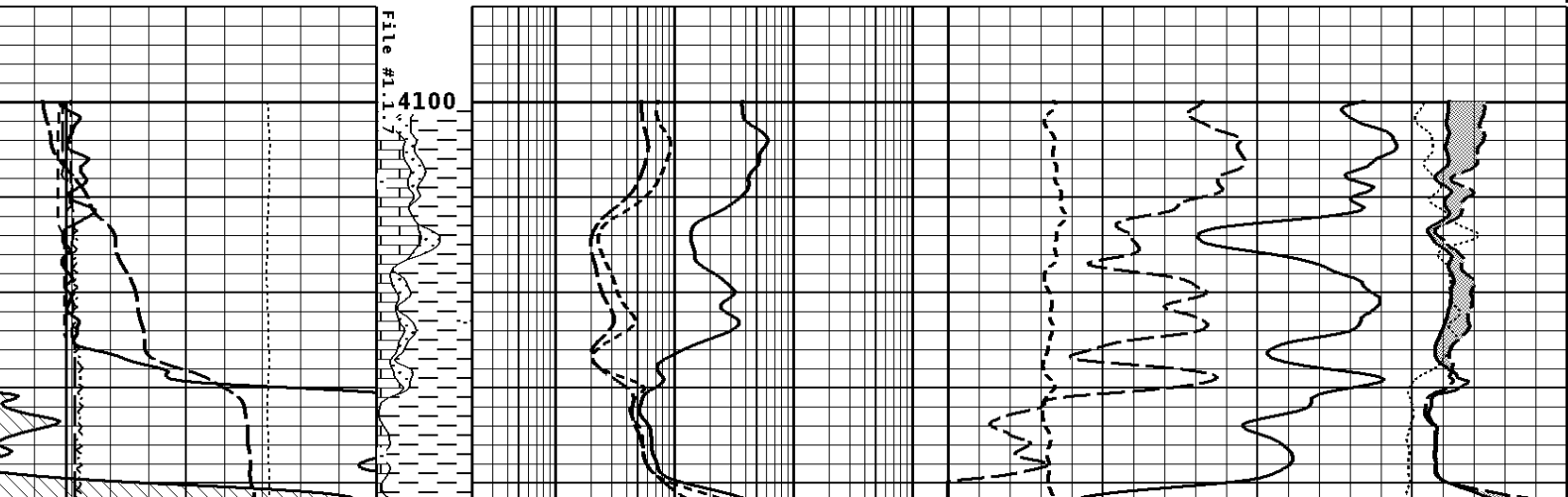
Acquired: 2019-12/07 11:10 3.4.1-13972

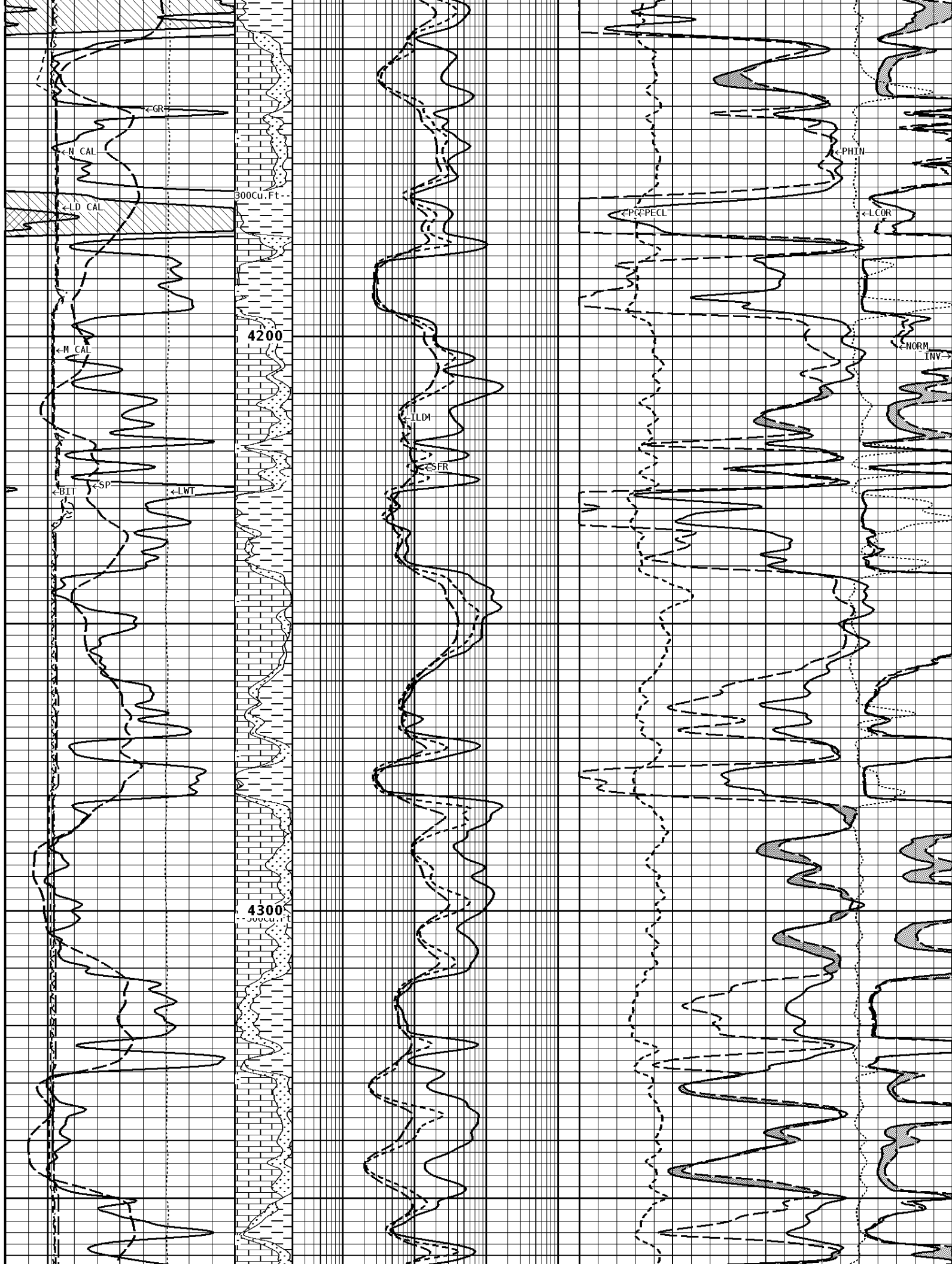
Reference: 0

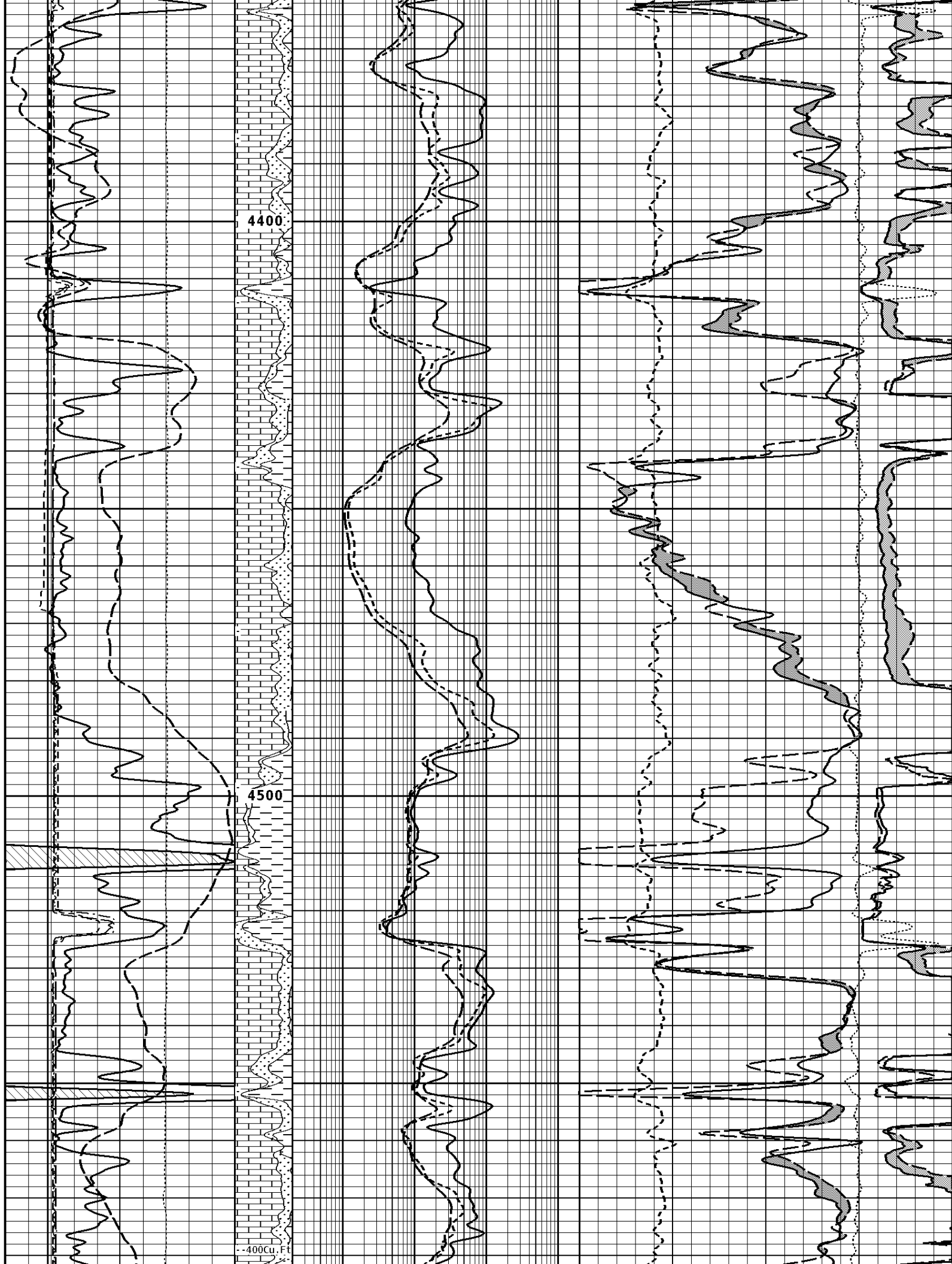
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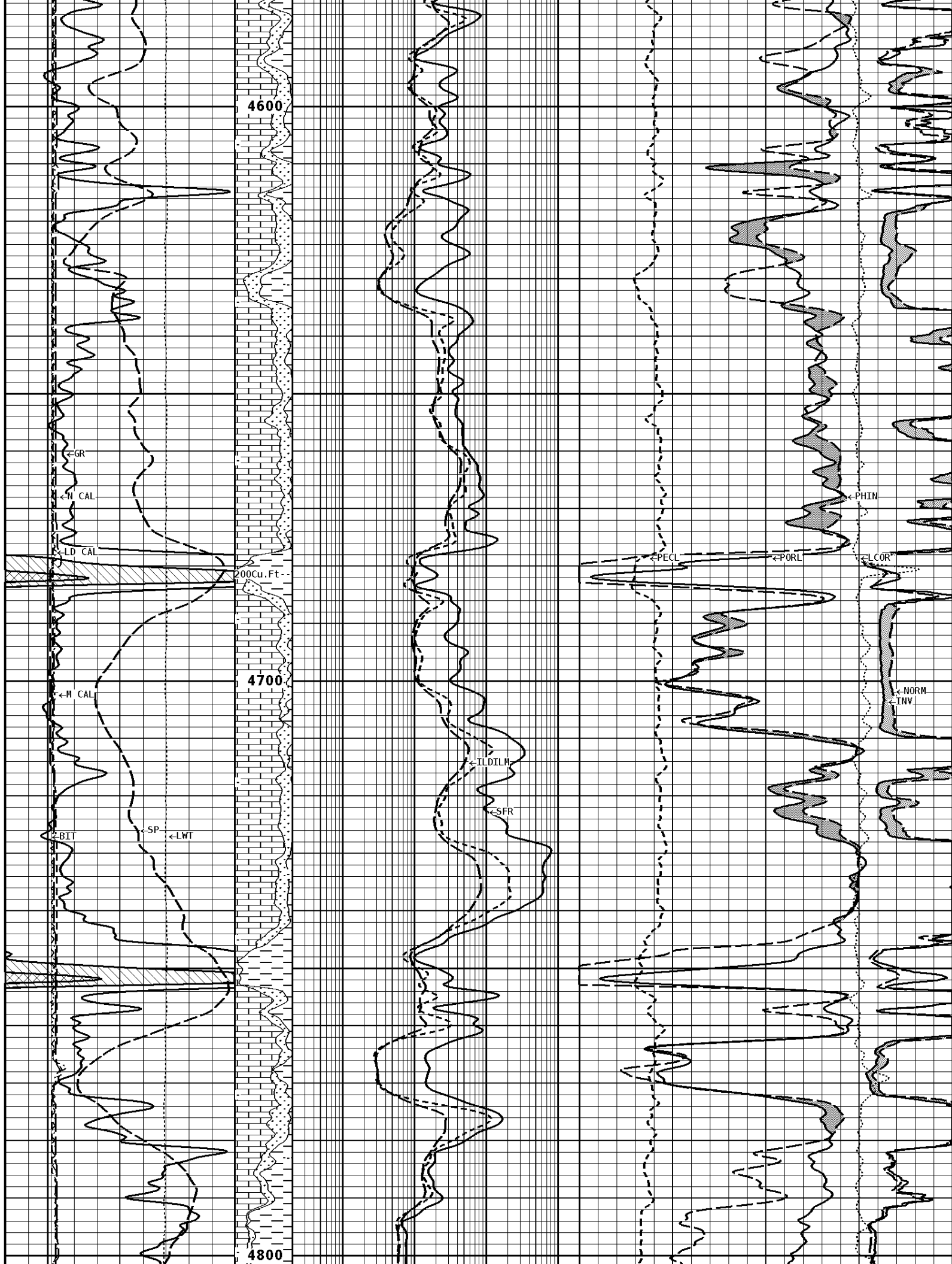
CALIPER MICRO INCHES (IN) 16 26 6 16			
BIT SIZE INCHES (IN) 6 16			
NEUTRON (Y) CALIPER INCHES (IN) 16 26 6 16			
DENSITY (X) CALIPER INCHES (IN) 16 26 6 16		DENSITY CORRECTION G/CC -0.75 0.25	NORMAL OHMM 0 40 INVERSE OHMM 0 40
TENSION LBS 10000 0	Volume Quartz Volume Calcite Volume Dolo/Shale BHV AHV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

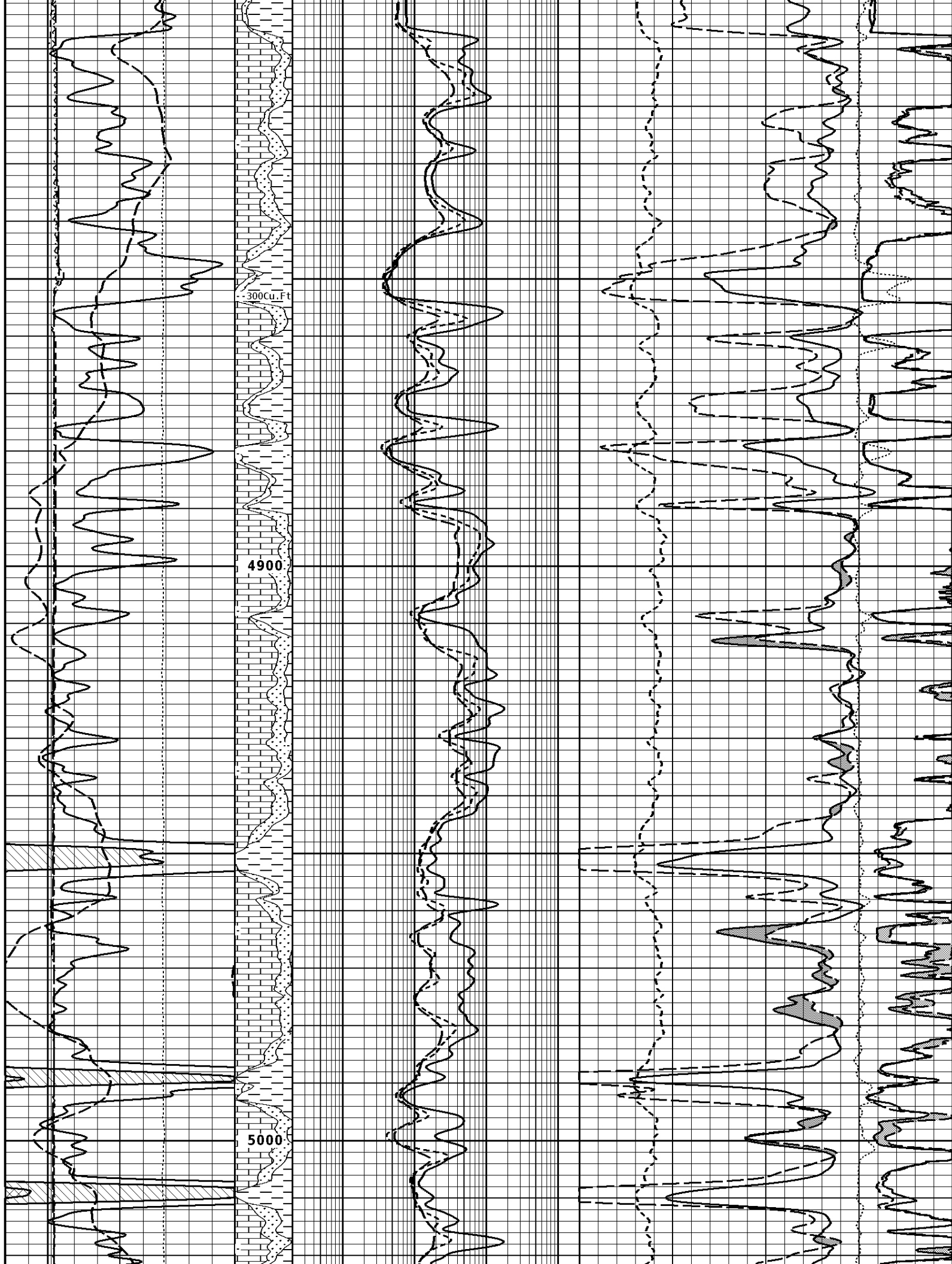
1:240 MAIN SECTION

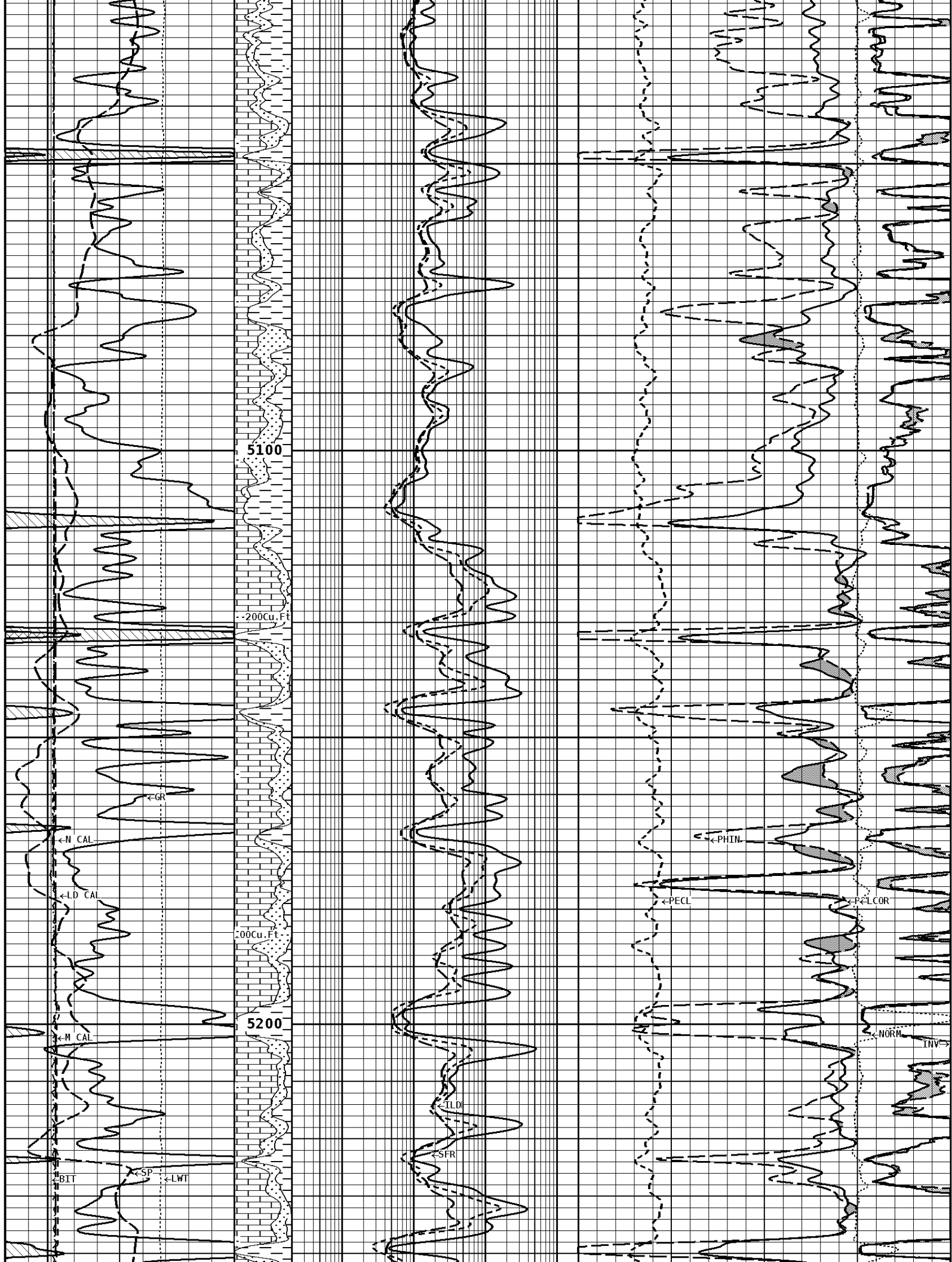


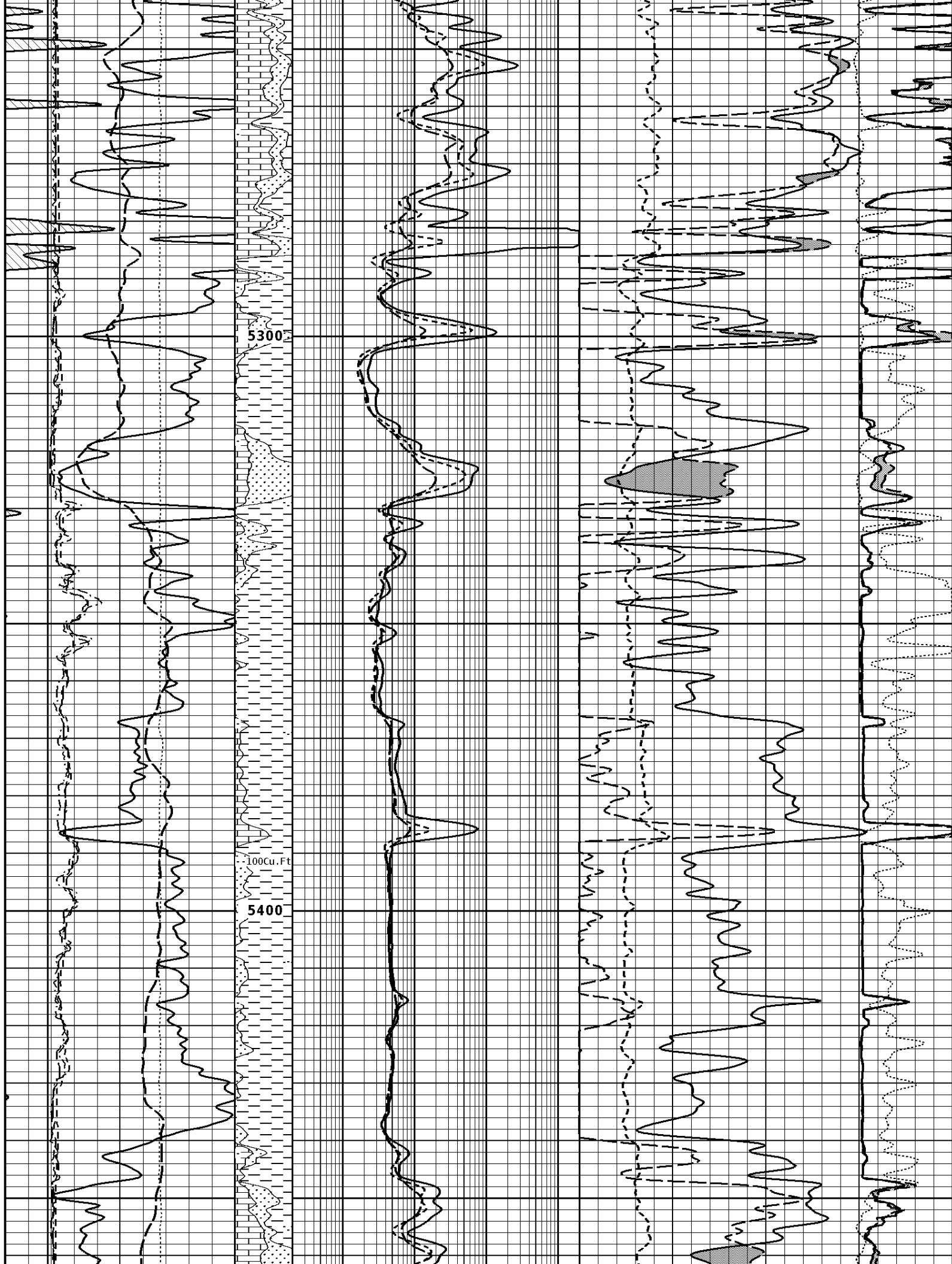


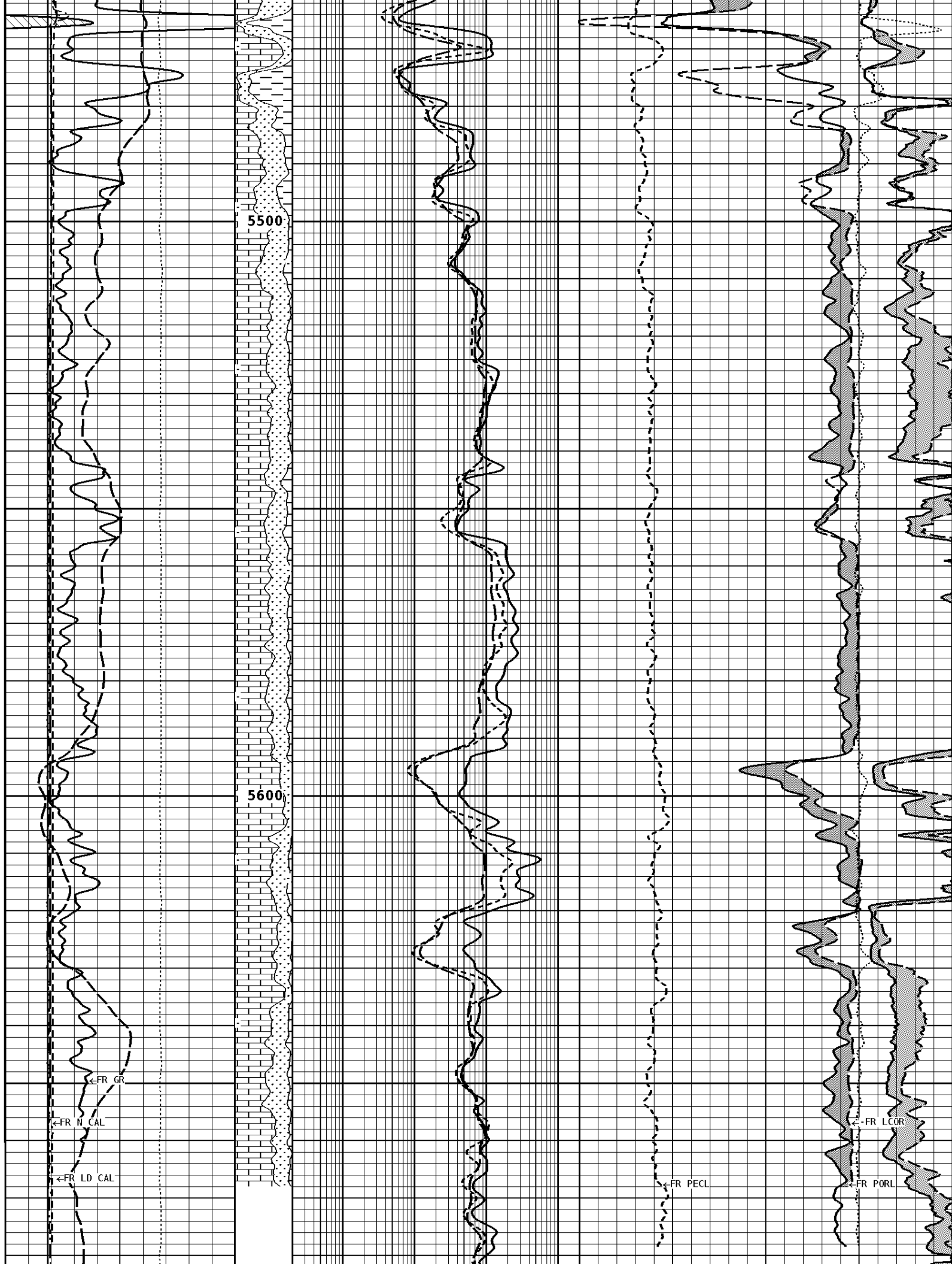


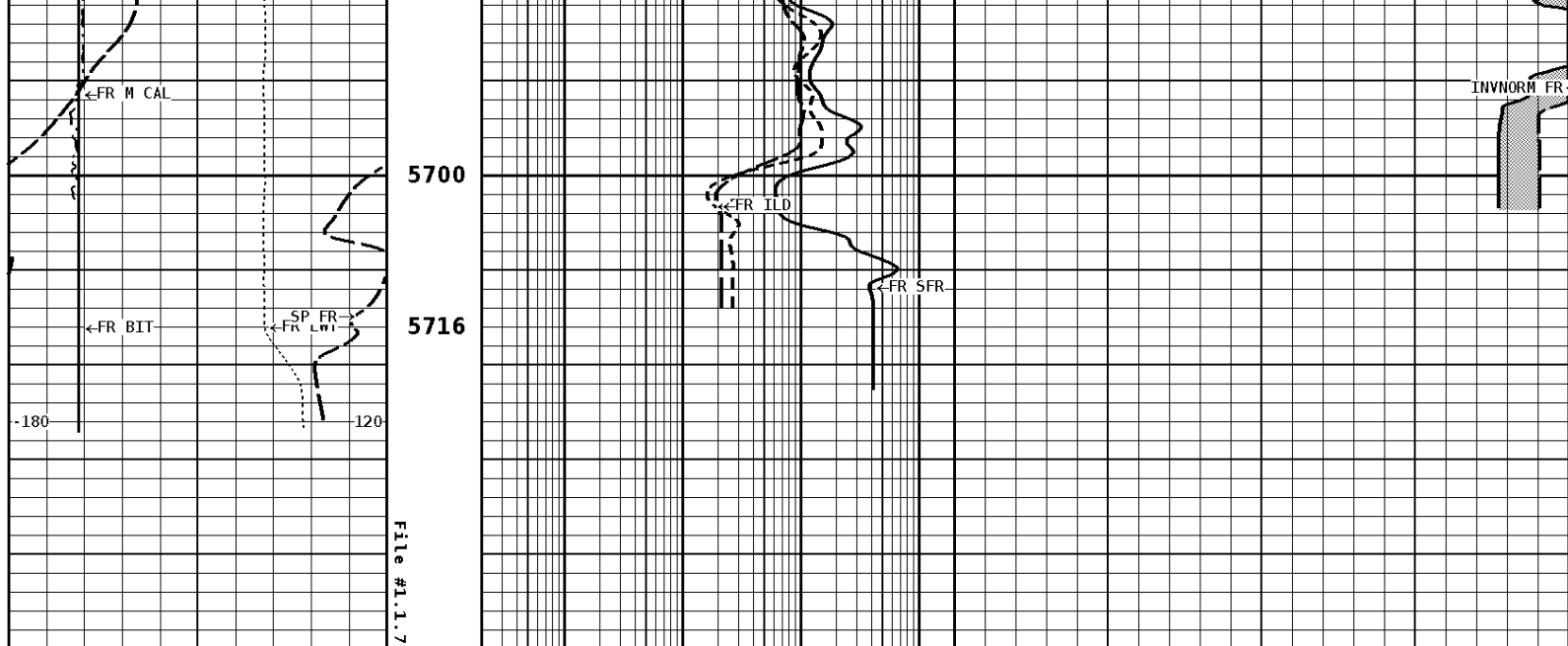












1:240 MAIN SECTION

GAMMA RAY API UNITS 150 0 300 150	BHV AHV CU. FT	MEDIUM INDUCTION OHMM 0.2 2000.0	NEUTRON POROSITY (LIMESTONE) PERCENT 30 -10
SPONTANEOUS POTENTIAL mV → ← 30	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 BARN/ELECTRON 0 20
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	
Matrix Transit Time		47.5	us/ft	
Fluid Transit Time		189.0	us/ft	
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	5721.000	ft
Borehole Temperature	125.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	2.000	ohmm

Well File: casillas_hamker 20-3 dec-7-2019_qst

Scale: 1:240

Format: COMSAT

Segment: V1.D1.S5 Reprocess REPEAT

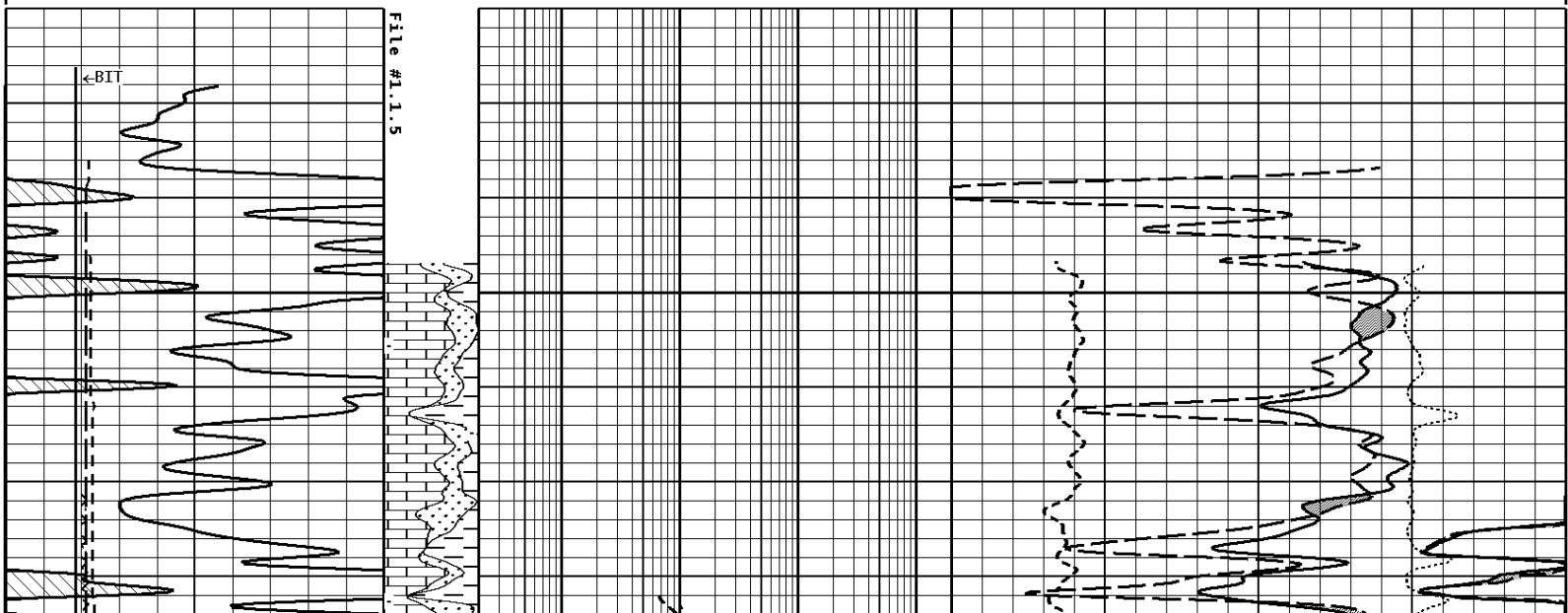
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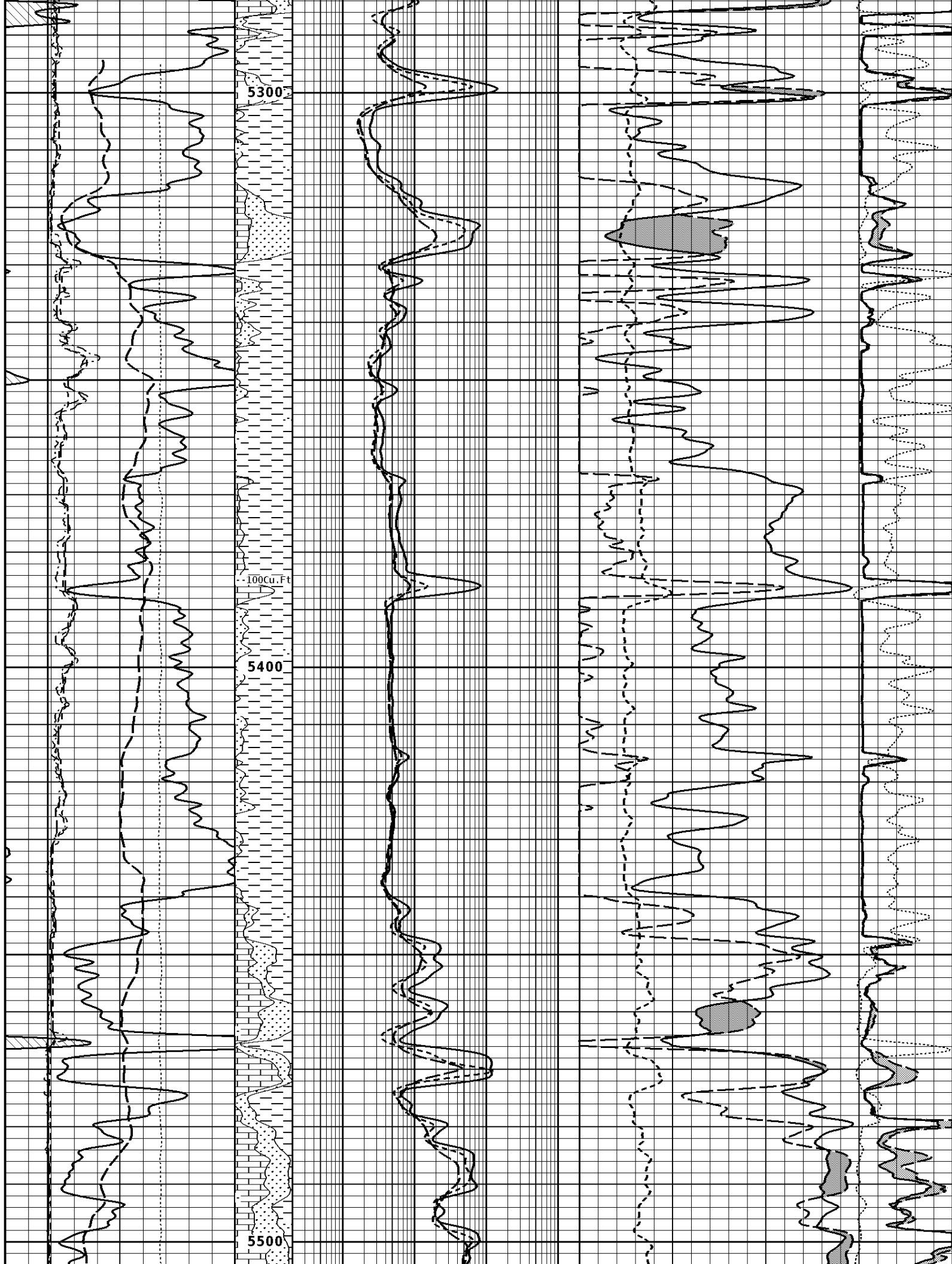
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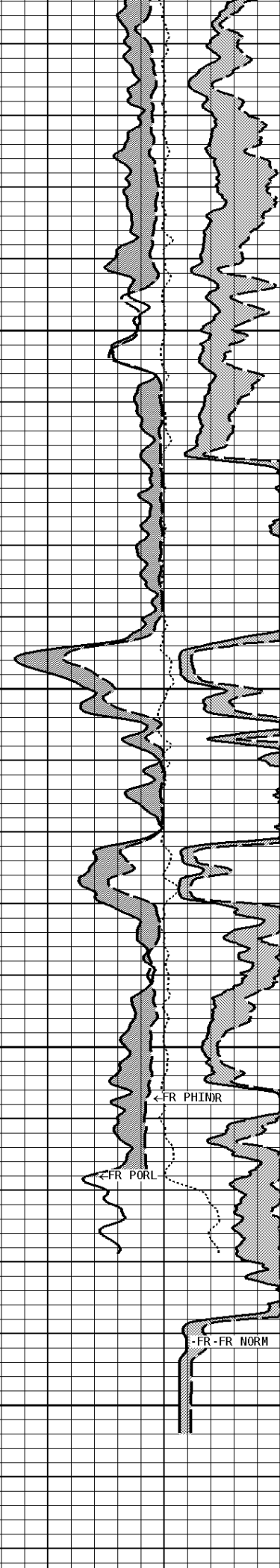
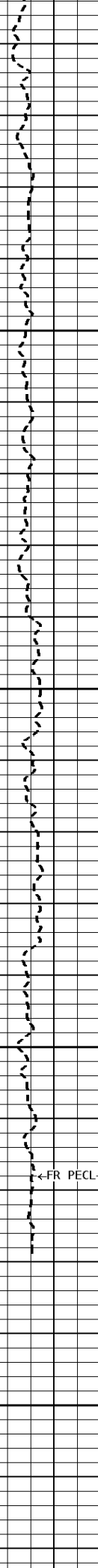
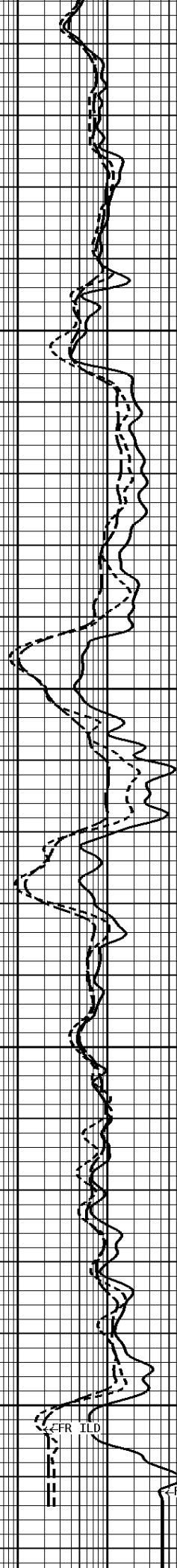
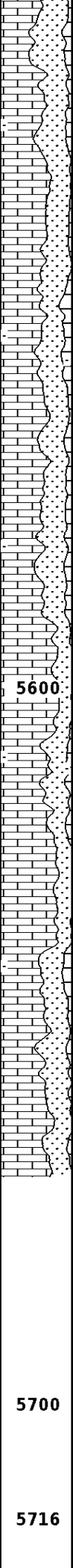
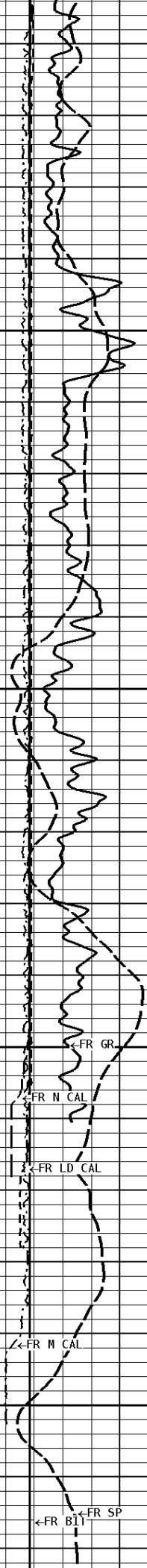
Processed: 2019-12/07 13:08 3.4.1-13972

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

1:240 REPEAT SECTION







5700

5716

FR ILO

FR SFR

FR PECL

FR PORL

FR PHINR

FR-FR NORM

A full-page grid of small squares, typical of graph paper. The grid consists of approximately 20 columns and 20 rows of squares. There are no margins or additional markings on the page.

INVERSE OHMM	
0	40
NORMAL OHMM	
0	40

Zone 1 99999.0 to 0.0 Feet

189.0	us/ft
Limestone	
7.875	in
5.500	in
0.250	in
Disable	
Fluid	
5721.000	ft
125.0	degF
1.00	DFHF
2.000	ohmm

Shop Calibration
GRT-B

Time : 09:53
ID : GPT_BB_013

Sensor Suite : GR-GR3			ID : GR1-BB-013		
	Measured	Units	Calibrated	Units	
GR	Background Jig	CPS	Jig	GRAPI	
	44 314		160		
Shop Calibration					
CNT-AA					
Performed : 03-Jun-2019			Time : 11:01		
Sensor Suite : CALI-BCN			ID : NDT-AF-411		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1 Ring#2		Ring#1 Ring#2		
CL # 1	7.5 12.5		6.0 12.0	IN.	
Performed : 08-AUG-2019			Time : 16:18		
Sensor Suite : BHC NEUT			ID : CNP-AD-037		
Source ID : N-1104					
	Tank	Verification	Units		
	Measured Calibrated	Jig			
N/F	3.7594 3.6893	3.6944			
Porosity	21.6 20.5	20.6		%	
Shop Calibration					
LDT-DF					
Performed : 03-Jun-2019			Time : 14:53		
Sensor Suite : CALI-LTH			ID : NDT-FA-404		
	Jig - Measured		Jig - Calibrated	Units	
	Ring#1 Ring#2		Ring#1 Ring#2		
CL # 1	8.3 13.2		6.0 12.0	IN.	
Performed : 03-Dec-2019			Time : 19:18		
Sensor Suite : BHCPELNG			ID : LDP-DA-062		
Source ID : 1637GW					
Short Space					
	BKGD	Al	Mg	Al+Fe	Units
LSW1	59	994	1604	617	CPS
LSW2	58	1159	1848	809	CPS
LSW3	218	2640	4281	2191	CPS
LSW4	272	2262	3264	1957	CPS
LSW5	26	44	49	42	CPS
LSW6	76	80	79	79	CPS
LSW7	48	52	54	51	CPS
LSW8	1	3	4	3	CPS
QS	0.224	0.208	0.191	0.214	
PES			2.778	5.967	
SSDN		2.600	1.680		G/CC
Long Space					
	BKGD	Al	Mg	Al+Fe	Units
LLW1	89	1139	4703	663	CPS
LLW2	98	2033	7985	1435	CPS
LLW3	372	3656	13901	3102	CPS
LLW4	483	1704	5322	1526	CPS
LLW5	54	65	108	65	CPS
LLW6	152	153	144	154	CPS
LLW7	99	102	99	102	CPS
LLW8	4	6	16	6	CPS
QL	0.210	0.200	0.185	0.199	
PEL			2.697	5.458	
LSDN		2.600	1.680		G/CC
Shop Calibration					
CST-AD					
Performed : 26-MAY-2003			Time : 16:03		
Sensor Suite : SON-ANA			ID : CST-AB-24		
Transit Time					
T/R Pair	Measured	Calibrated	Units		
T1R1	208.5	208.5	uS		
T2R2	208.5	208.5	uS		
T1R2	322.5	322.5	uS		
T2R1	322.5	322.5	uS		
Amplitude					
T/R Pair	Measured	Calibrated	Units		
T1R1	90.00	90.00	mV		
T2R2	90.00	90.00	mV		
T1R2	78.00	78.00	mV		
T2R1	78.00	78.00	mV		
Shop Calibration					
MLT-AB					

Performed : 03-JUN-2019			Time : 15:59		
Sensor Suite : CAL-MSFL			ID : MLT-012		
CL # 1	Jig - Measured		Jig - Calibrated		Units
	Ring#1	Ring#2	Ring#1	Ring#2	IN.
	12.4	15.4	6.0	12.0	
Performed : 03-Jun-2019			Time : 16:08		
Sensor Suite : MS-NI			ID : MLT-012		
	Jig#1	Jig#2	Verifier		Units
VN-0	522.41	3592.20	3592.82		
VN-90	322.29	4426.00	4426.45		
MPNR Measured	3.07	28.50	28.51		
MPNR Calibrated	2.00	20.00	20.00		OHMM
VI-0	379.00	5381.38	5381.98		
VI-90	608.31	4363.26	4364.08		
MPIR Measured	3.58	34.64	34.64		
MPIR Calibrated	2.00	20.00	20.00		OHMM
Shop Calibration					
PIT-CA					
Performed : 10-MAY-2019			Time : 11:27		
Sensor Suite : P-IND-T			ID : PIT-AC-043		
Medium					
	Measured		Calibrated		
	R	X	R	X	Units
Air	131492	129685	0.0	0.0	MMHOS
Zero	131066	131062	-18.1	59.6	MMHOS
Reference	244915	244454	4981.9	5059.6	MMHOS
Loop	130404	210498	3515.7	3611.2	MMHOS
Sonde Error			-0.5	-1.7	MMHOS
Cond			4981.9	5059.6	MMHOS
Deep					
	Measured		Calibrated		
	R	X	R	X	Units
Air	131939	129230	0.0	-0.0	MMHOS
Zero	131079	131067	-15.6	35.3	MMHOS
Reference	220620	224092	1984.4	2035.3	MMHOS
Loop	129308	206166	1595.4	1712.8	MMHOS
Sonde Error			-0.6	-7.8	MMHOS
Cond			1984.4	2035.3	MMHOS
Temperature					
	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF
Performed : 10-May-2019			Time : 14:03		
Sensor Suite : SFL			ID : PIT-AC-043		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32732.6	48929.1	0.0	7028.0	uA
Ib	32768.6	49680.1	0.0	1750.0	mA
MOM1	32722.0	56290.6	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 10-MAY-2019			Time : 11:16		
Sensor Suite : P-SP			ID : PIT-AC-043		
Internal					
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32774.5	58935.9	0.0	1000.0	mV

STEP
energy services

Company: CASILLAS PETROLEUM CORP
Well: HAMKER #20-3
Location: 1420' FSL & 660' FWL
Logged: 12-07-2019
K.B. Elev: 2858.0 Ft