

HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON MICROLOG

COMPANY	EOG RESOURCES		
WELL	GILLESPIE 21 #1		
FIELD	WILLIS		
COUNTY	STEVENS		
STATE	KANSAS		
COMPANY	EOG RESOURCES	WELL	GILLESPIE 21 #1
FIELD	WILLIS	COUNTY	STEVENS
COUNTY	STEVENS	STATE	KANSAS
API No.	15-189-22771	Location	1780' FNL & 1890' FWL
Ground Level	3158.0 ft	Elev. K.B.	3158.0 ft
Log measured from	KELLY BUSHING	D.F.	3157.0 ft
Drilling measured from	KELLY BUSHING	G.L.	3146.0 ft
Other Services:	ACRT BSAT		

Run No.	ONE	Depth - Driller	6550.00 ft
		Depth - Logger	6554.0 ft
		Bottom - Logged Interval	6516.0 ft
		Top - Logged Interval	3300.0 ft
		Casing - Driller	8.625 in @ 1742.0 ft
		Casing - Logger	1742.0 ft @
		Bit Size	7.875 in @
		Type Fluid in Hole	WATER BASED MUD @
		Density	9.2 ppq 55.00 sp/qt
		PH	10.50 pH 8.0 cphn
		Source of Sample	FLOWLINE

Date	12-Jul-11	Time Since Circulation	4.0 hr
Time on Bottom	12-Jul-11 07:07	Max. Rec. Temperature	140.0 degF @ 6554.0 ft
Equipment	10782954 LIBERAL	Recorded By	S. JUNG
Witnessed By	S. MUELLER		

Fold here

Service Ticket No.: 8308171		API Serial No.: 15-189-22771		PGM Version: WL INSITE R3.2.5 (Build 2)			
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES			
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
Ph	Fluid Loss						
Source of Sample				RESISTIVITY EQUIPMENT DATA			
Rm @ Meas. Temp	@	@		Run No.	Tool Type & No.	Pad Type	Tool Pos.
Rmf @ Meas. Temp.	@	@		ONE	MICRO M85803	RUBBER	ADJ
Rmc @ Meas. Temp.	@	@					
Source Rmf	Rmc						
Rm @ BHT	@	@					
Rmf @ BHT	@	@					
Rmc @ BHT	@	@					
EQUIPMENT DATA							
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	10811258	Serial No.		Serial No.	1066_M85803_P45	Serial No.	10755066
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.		Diameter	4.75"	Diameter	3.625"
Detector Model No.	T-102	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS137	Source Type	AM241BE
Length	8"	LSA [Y/N]		Serial No.	5073GW	Serial No.	DSN-436
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci
LOGGING DATA							
GENERAL		GAMMA		ACOUSTIC		DENSITY	

Run No.	Depth		Speed ft/min	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
	From	To		L	R	L	R		L	R		L	R	
ONE	TD	3300'	REC	0	150				30	-10	2.71	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 4.5 & 5.5 INCH CASINGS

GPS COORDINATES: LAT: 37.25 N & LONG: 101.35 W

CHLORIDES REPORTED AT 2800 MG/L LCM REPORTED AT 10 PPB

TODAY'S CREW: A. VAQUERA, P. COBLE

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - LIBERAL, KS (620-624-8123)

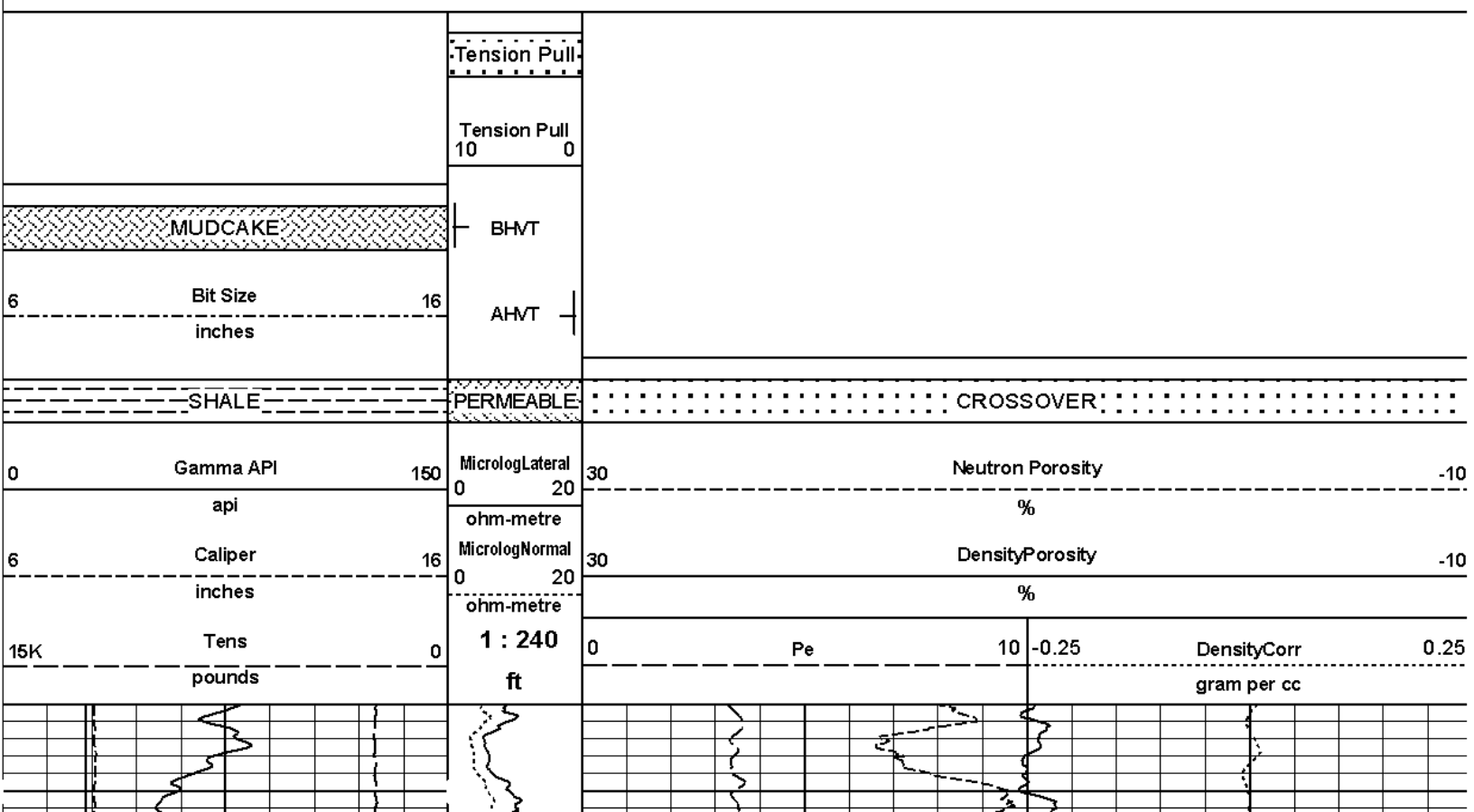
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

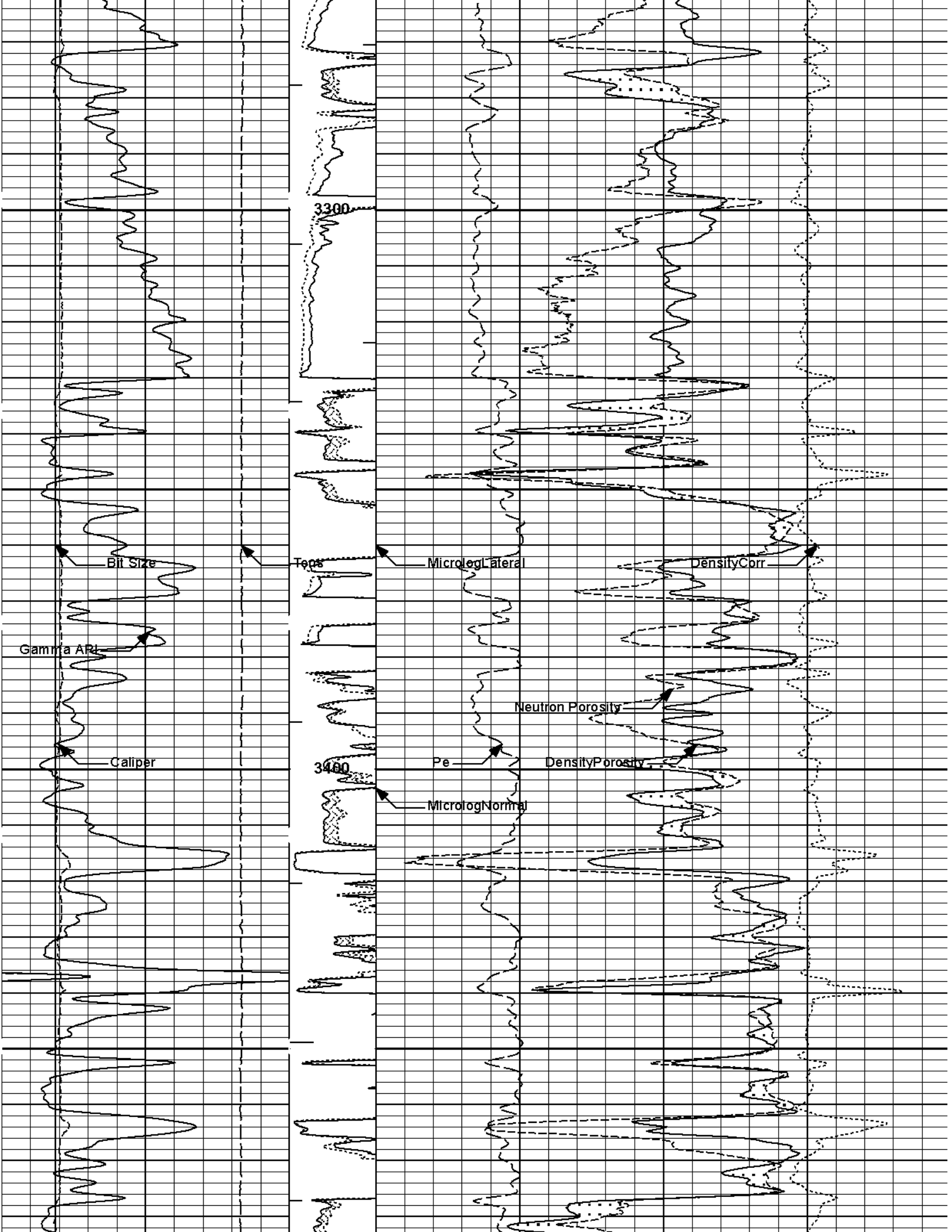
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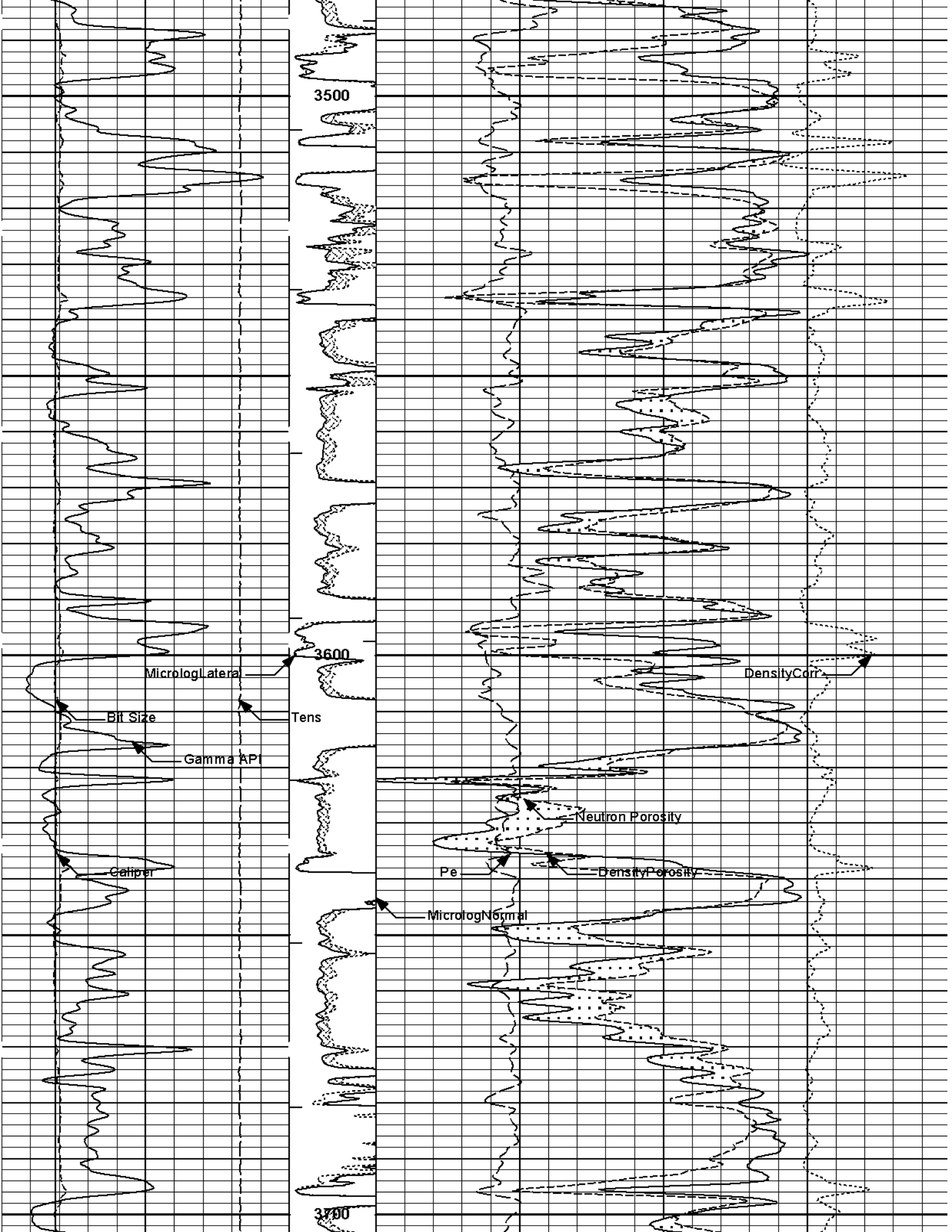


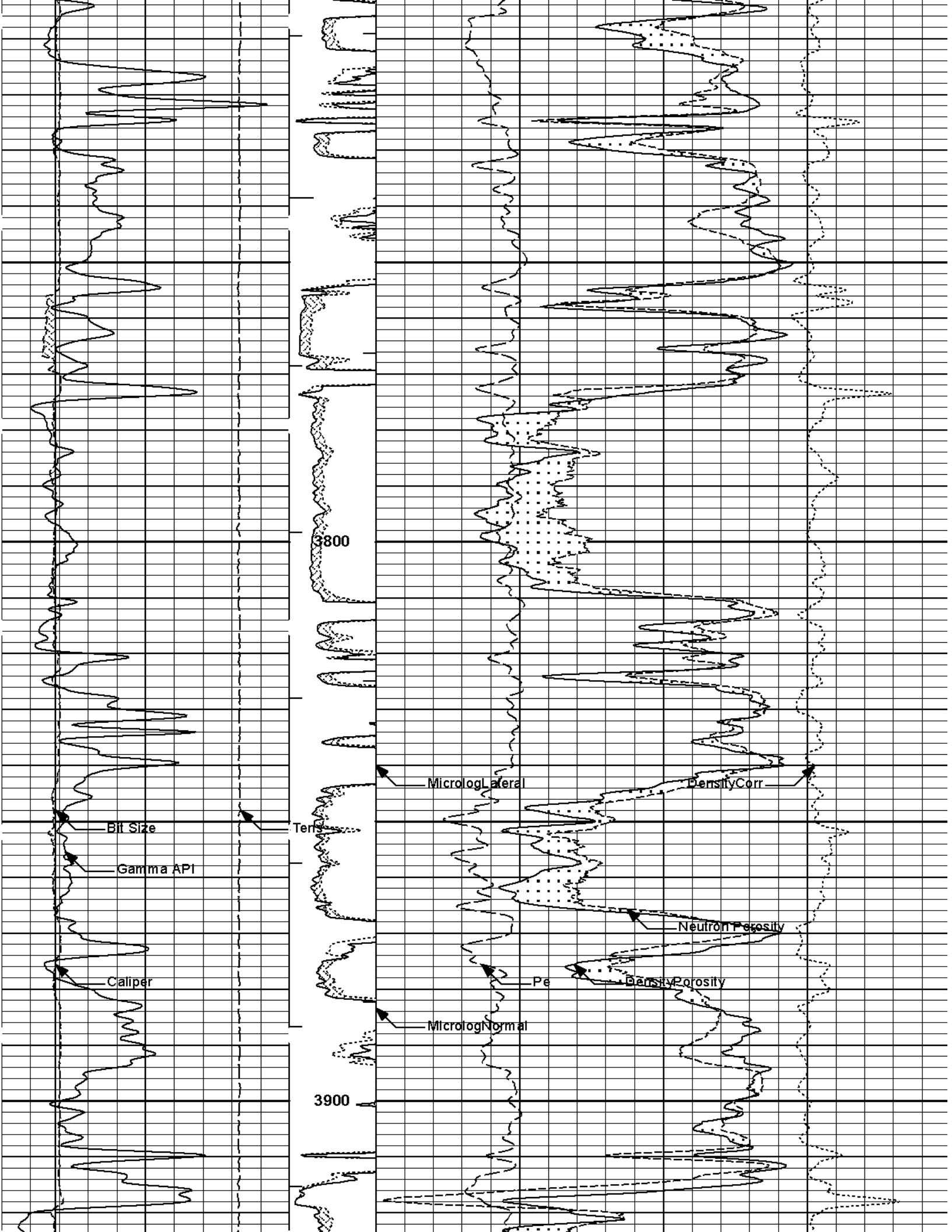
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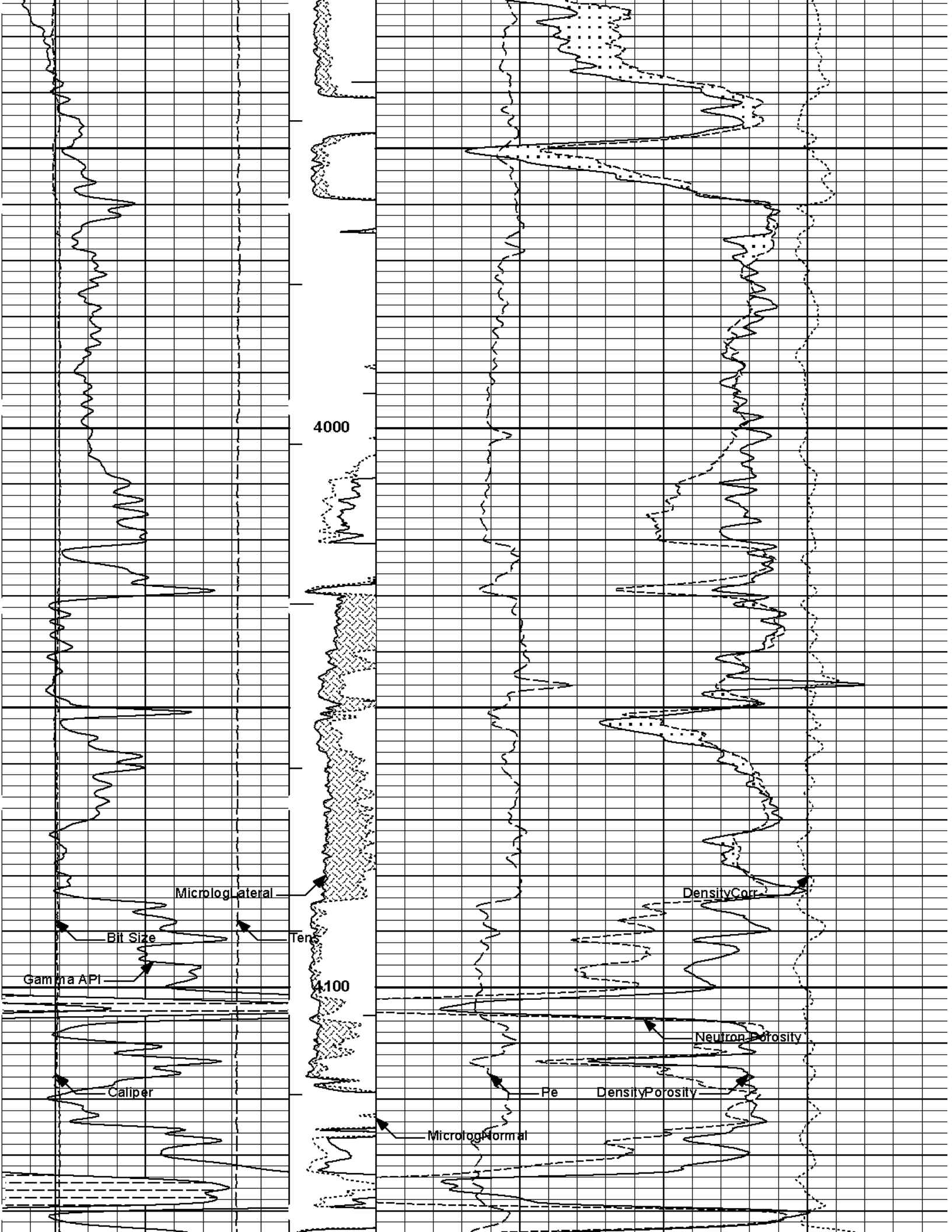
5 INCH MAIN LOG

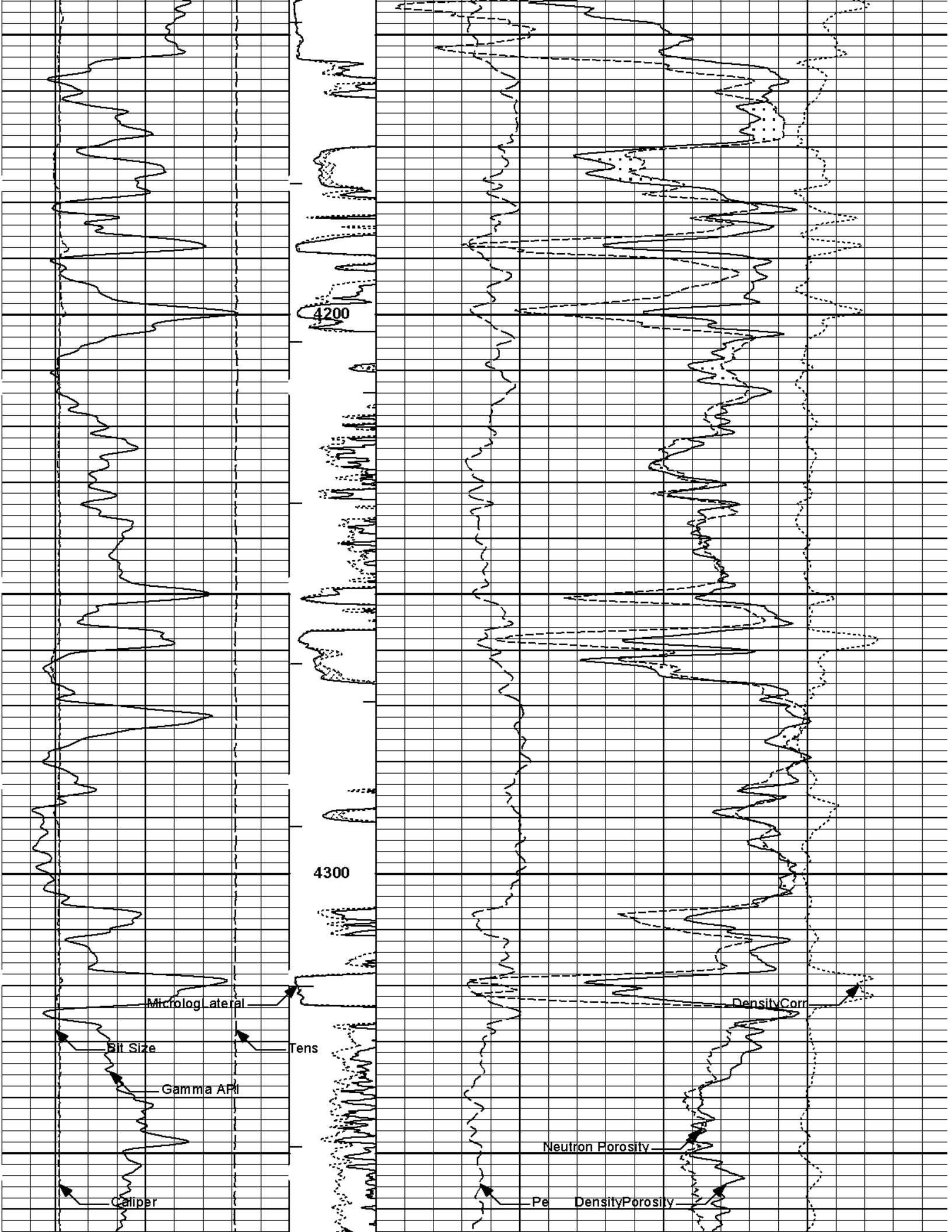


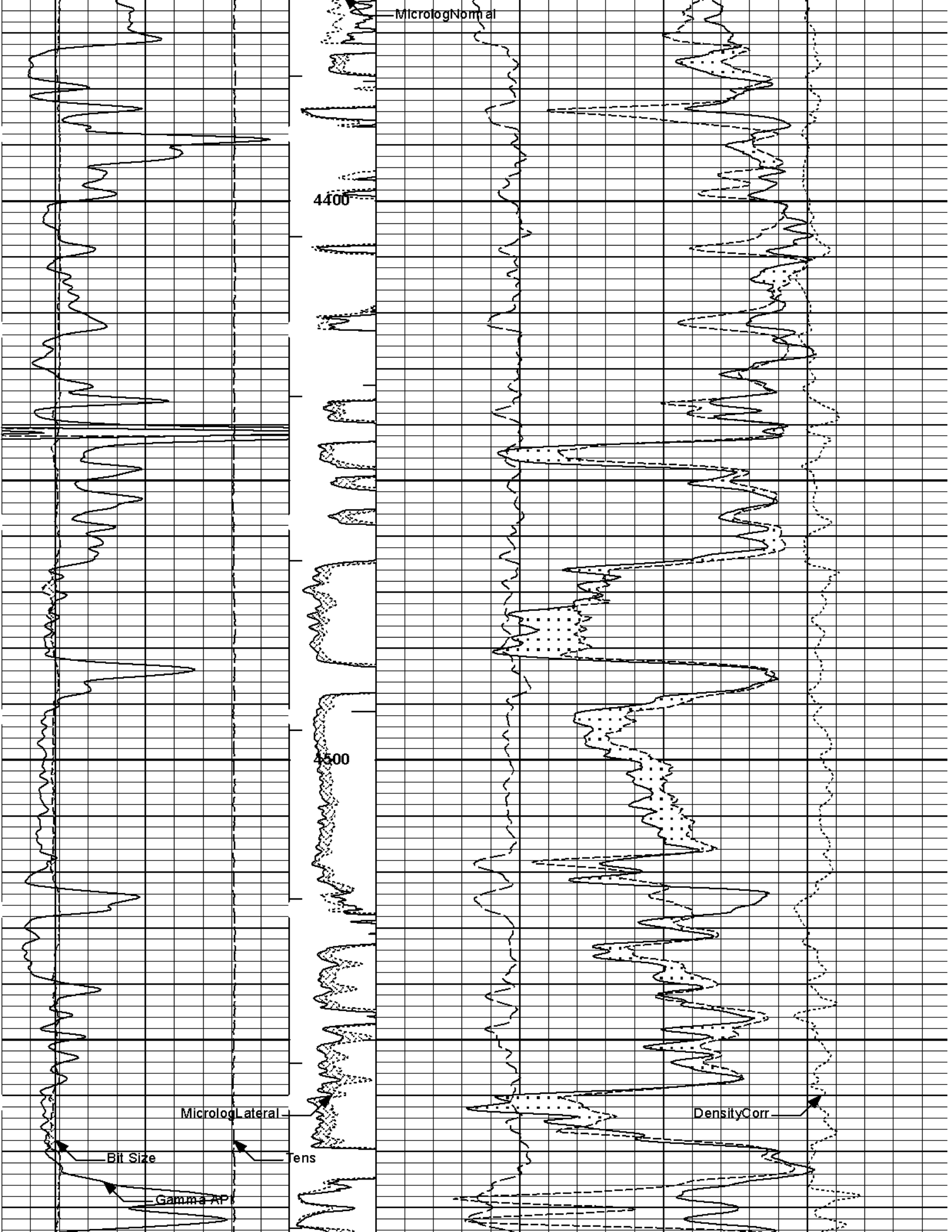


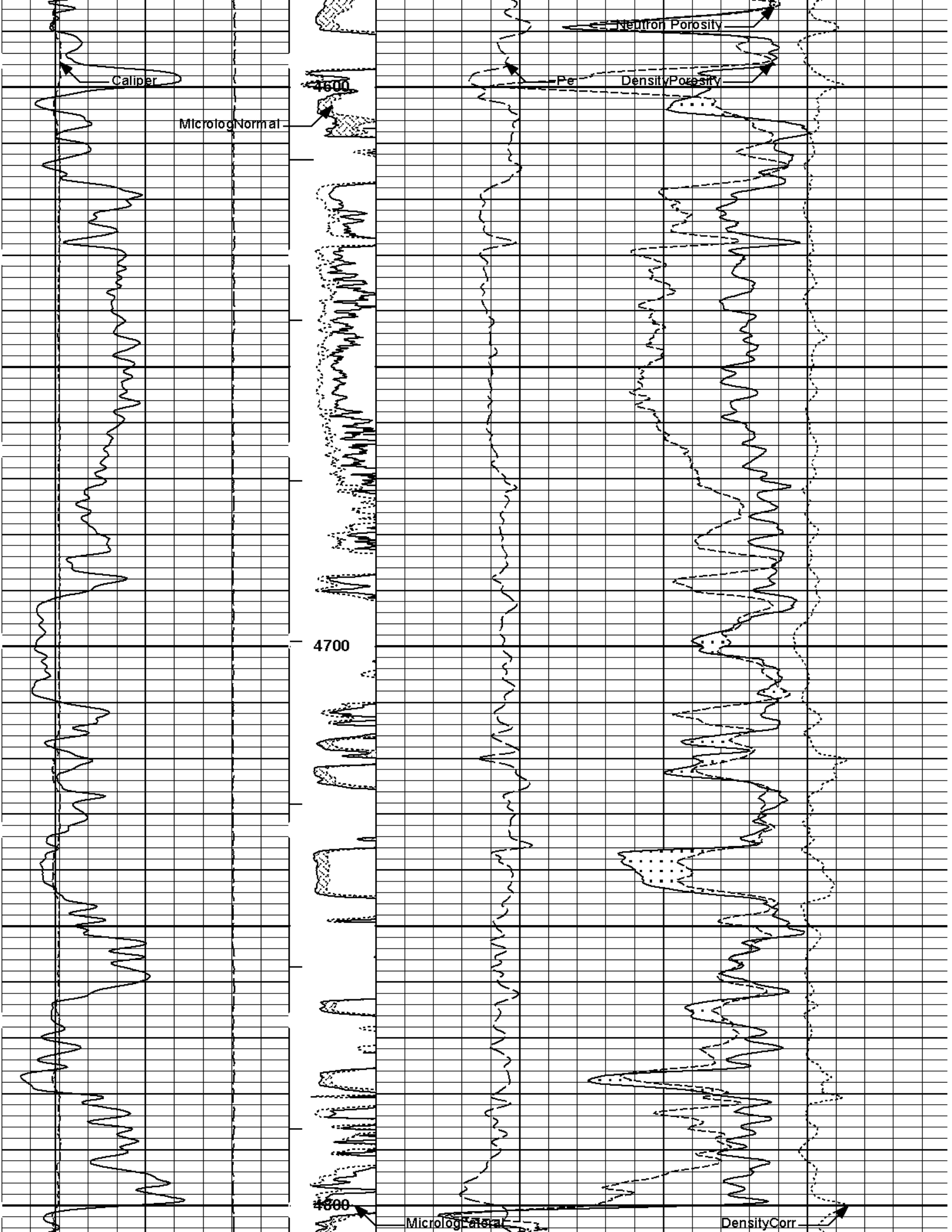


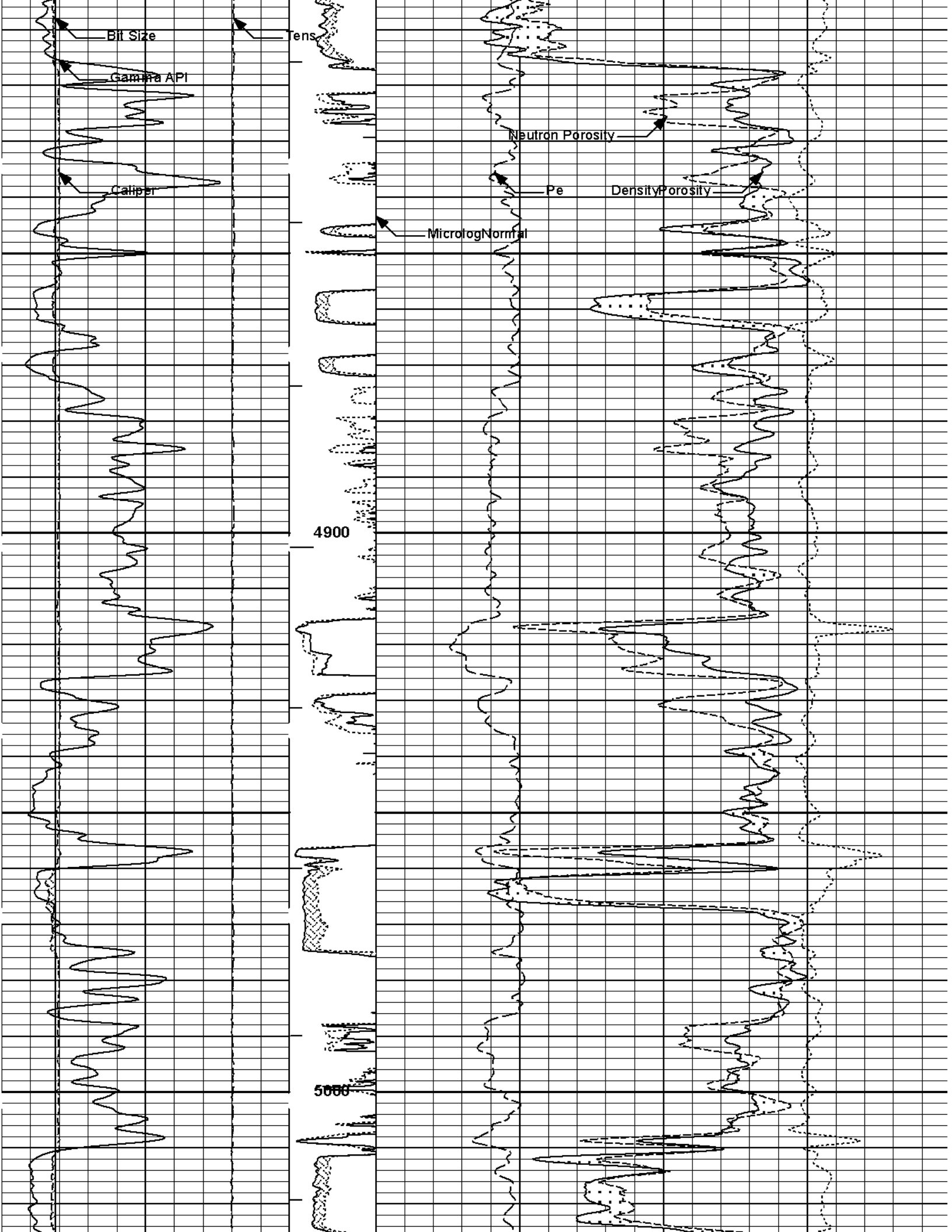


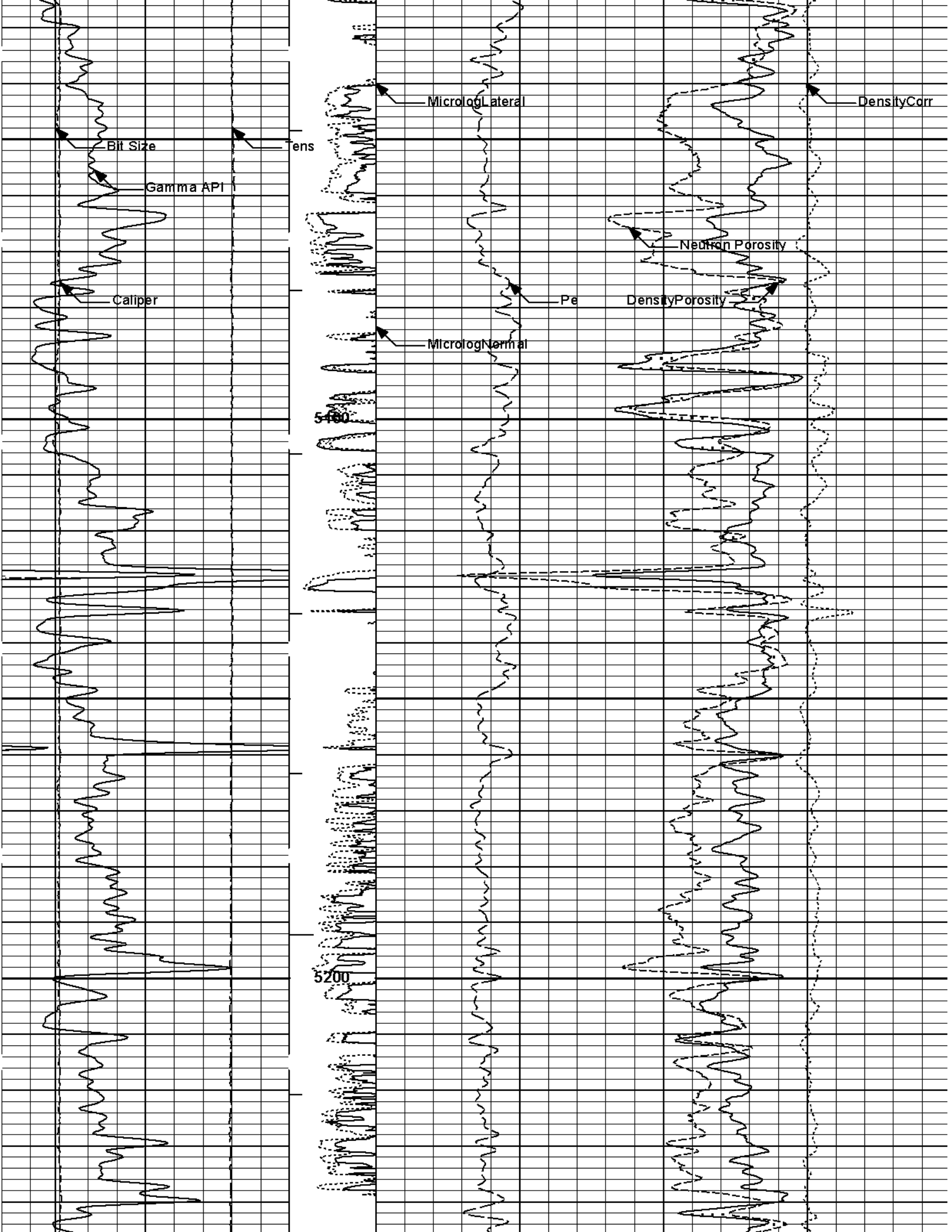


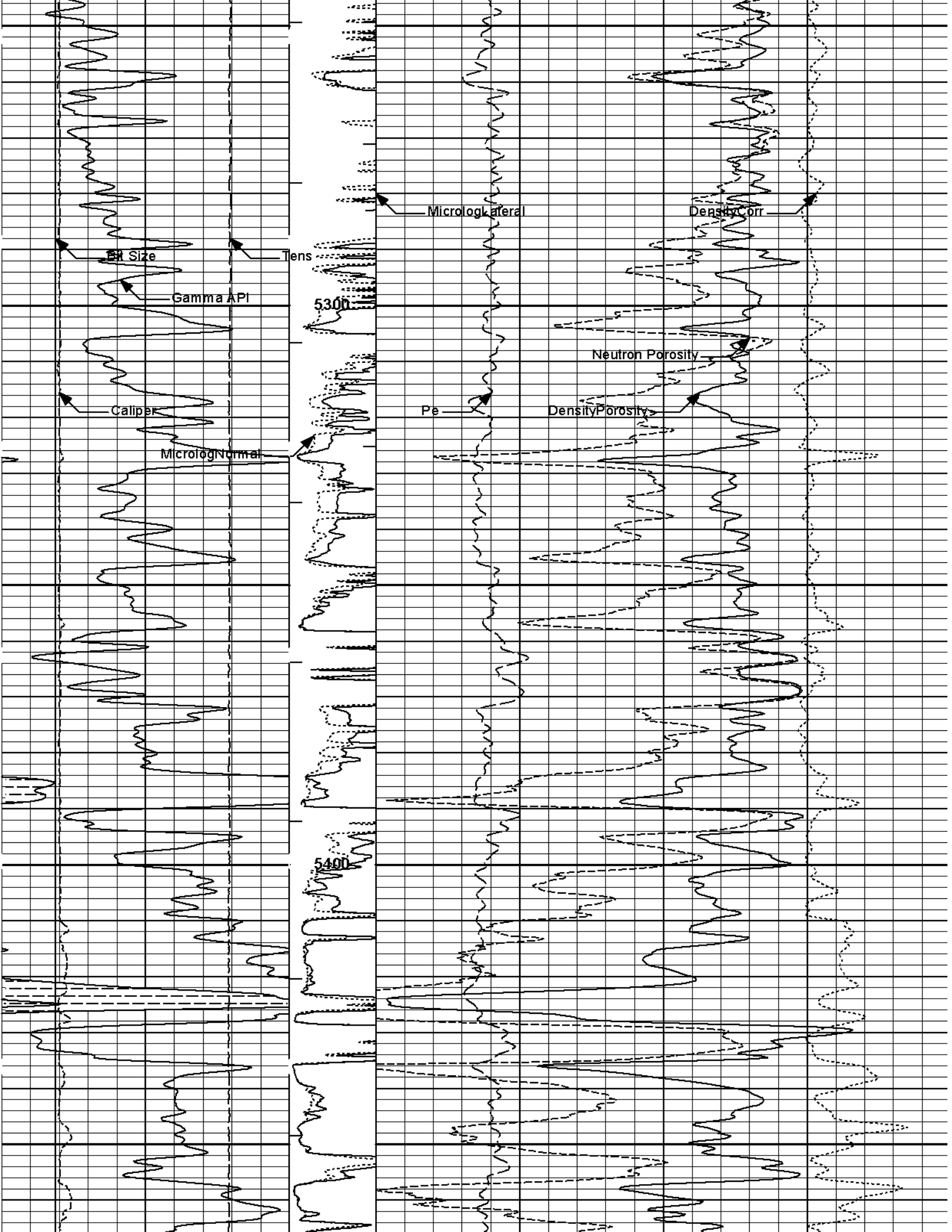


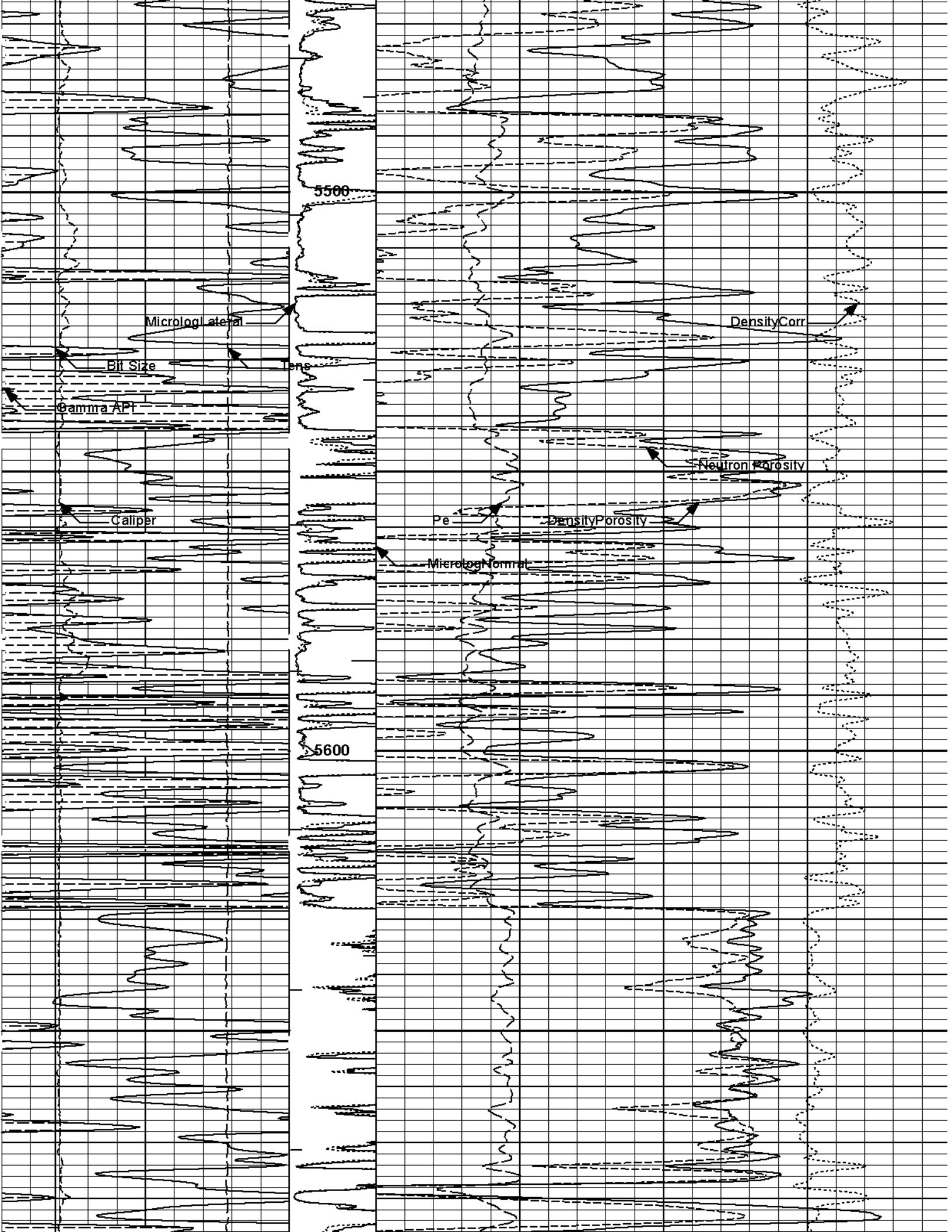


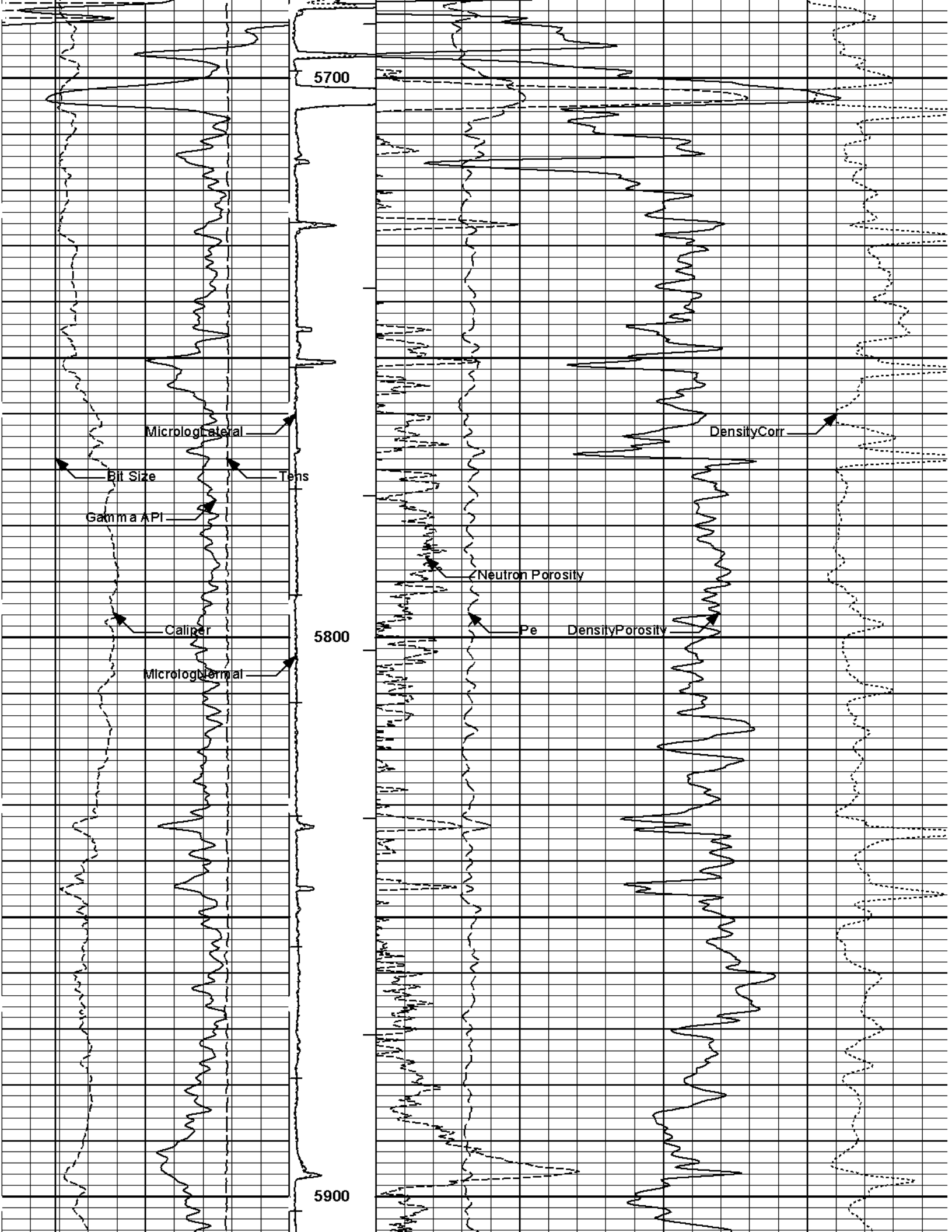


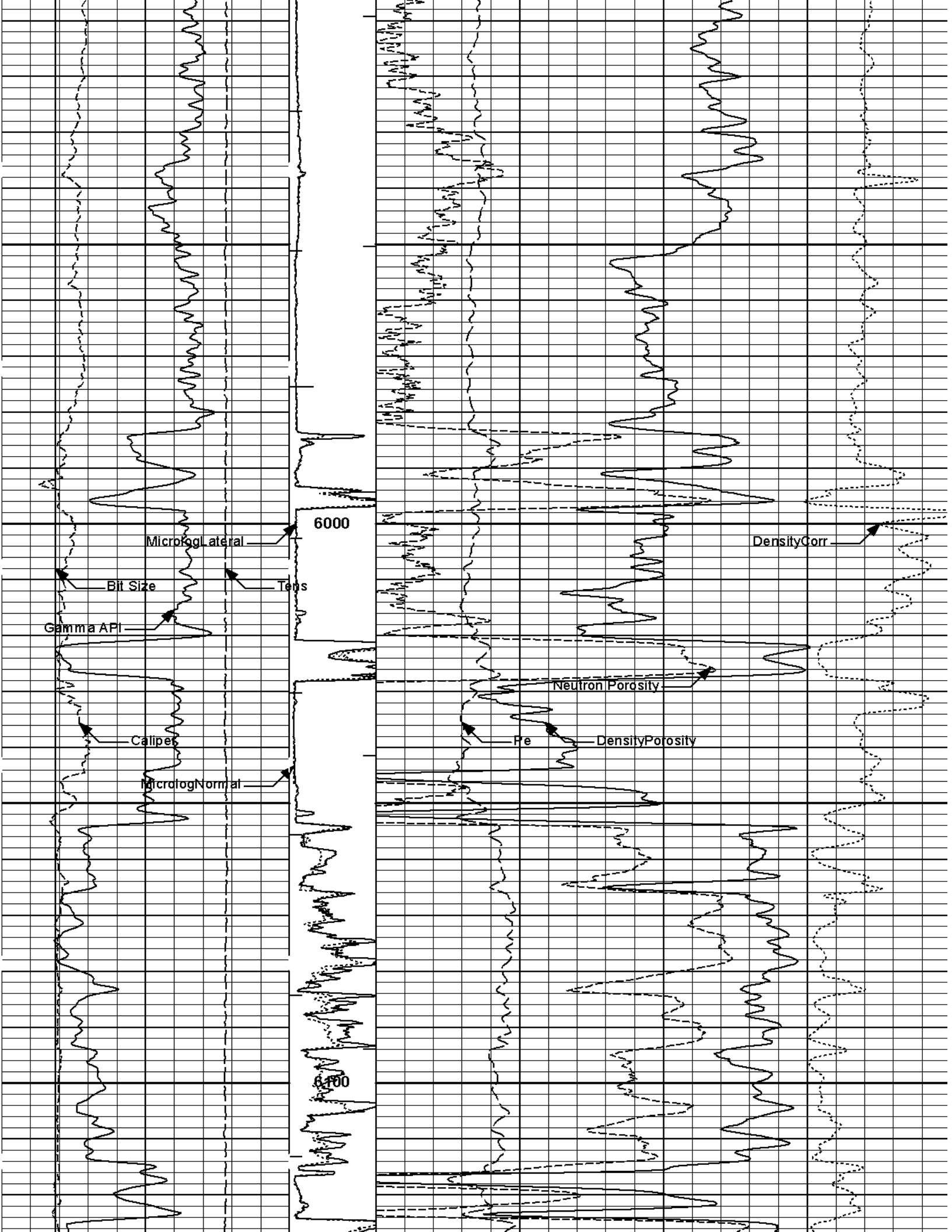


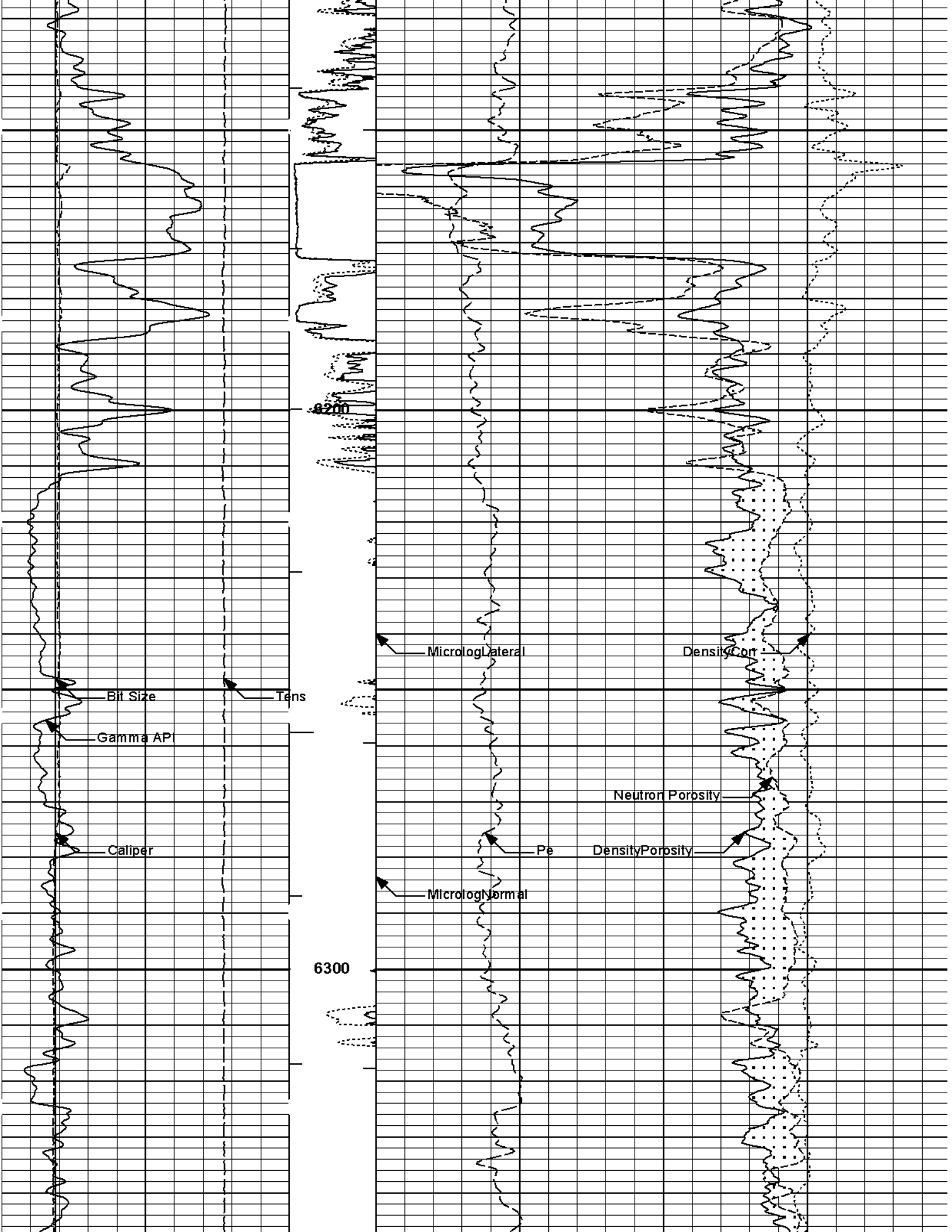


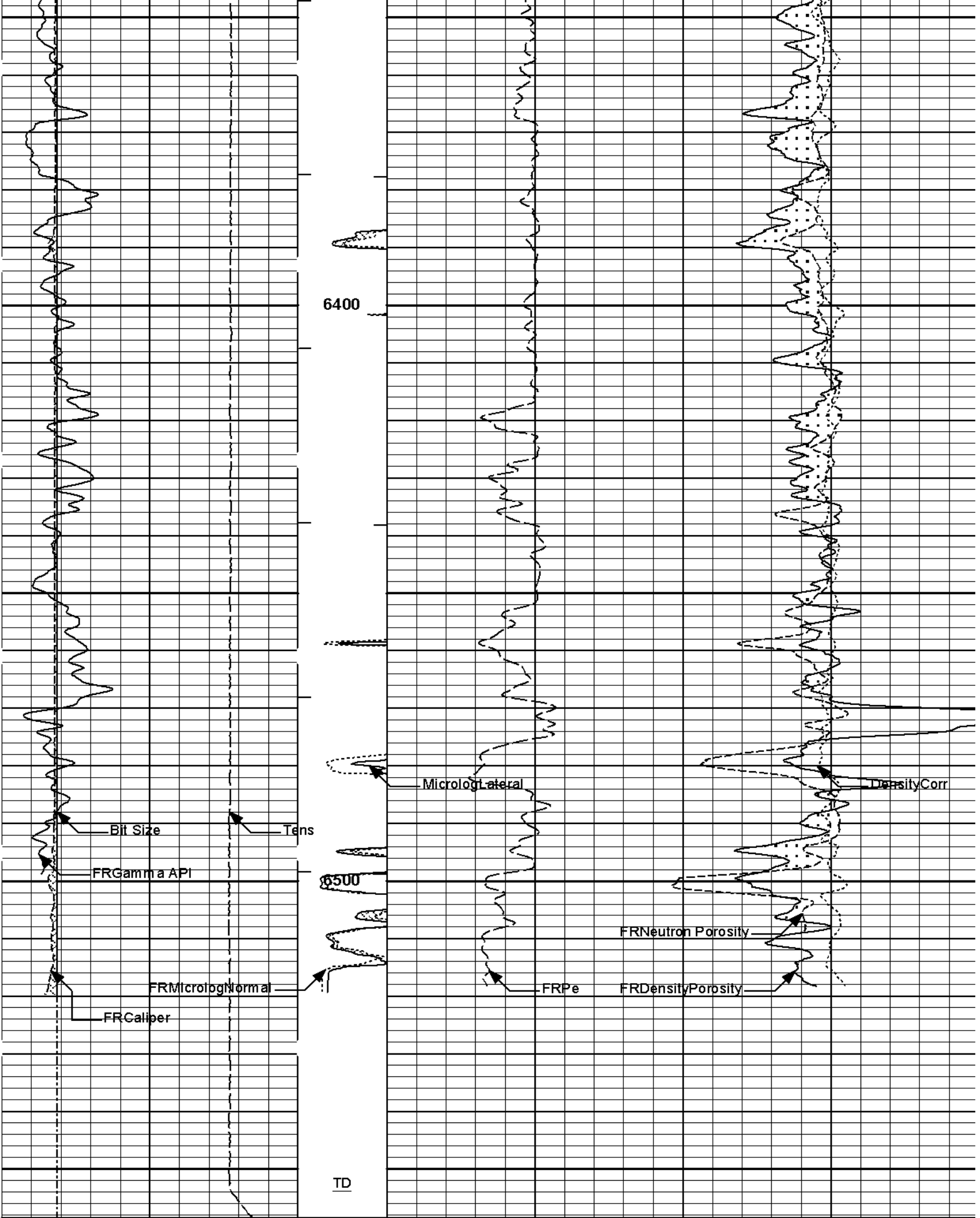




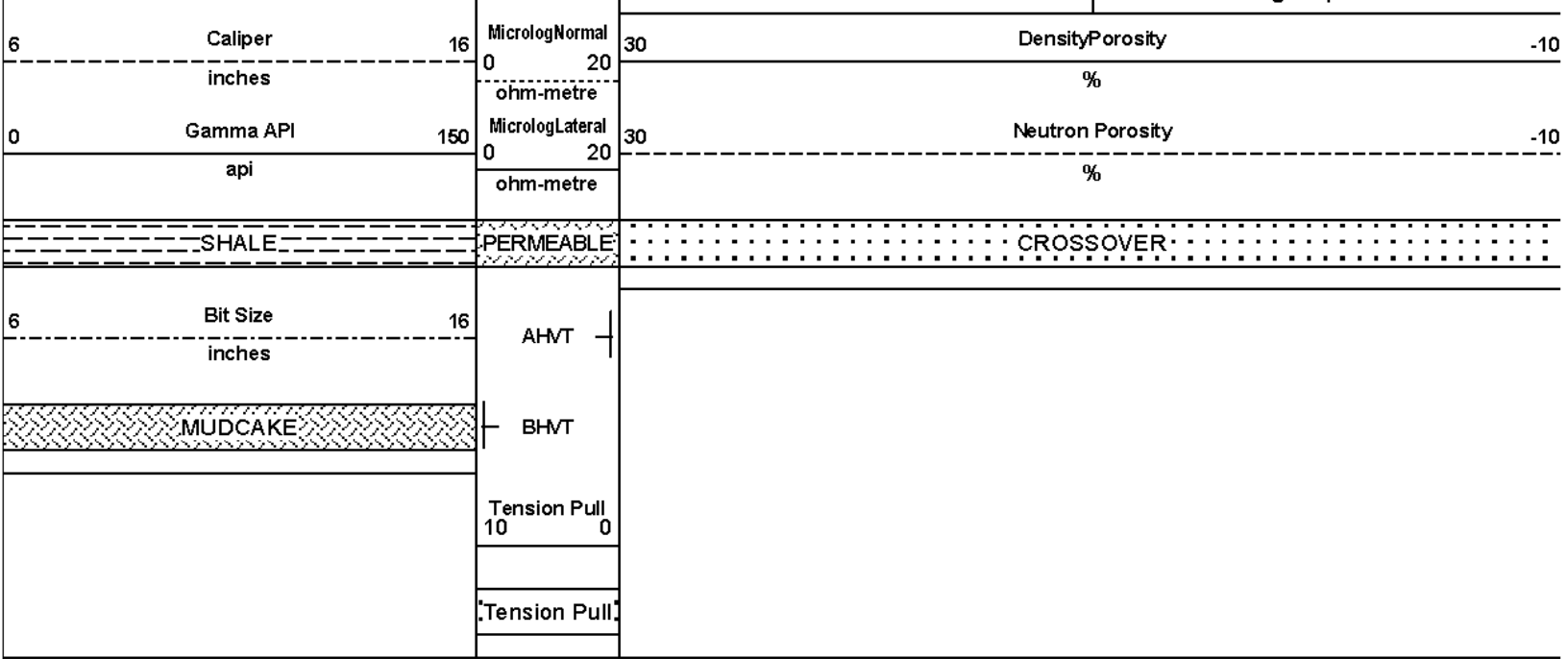








15K	Tens	0	1 : 240	0	Pe	10	-0.25	DensityCorr	0.25
	pounds		ft					gram per cc	



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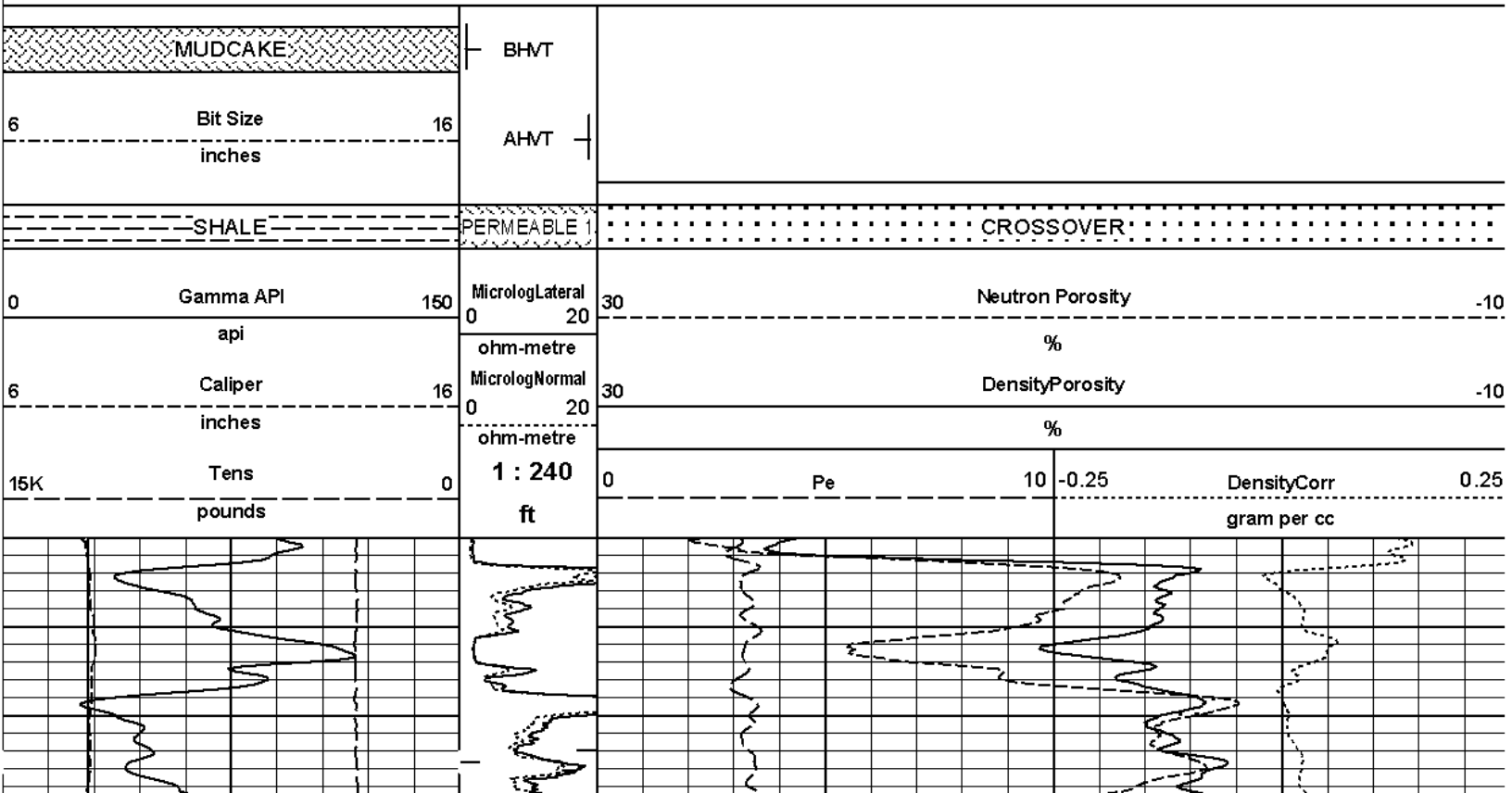
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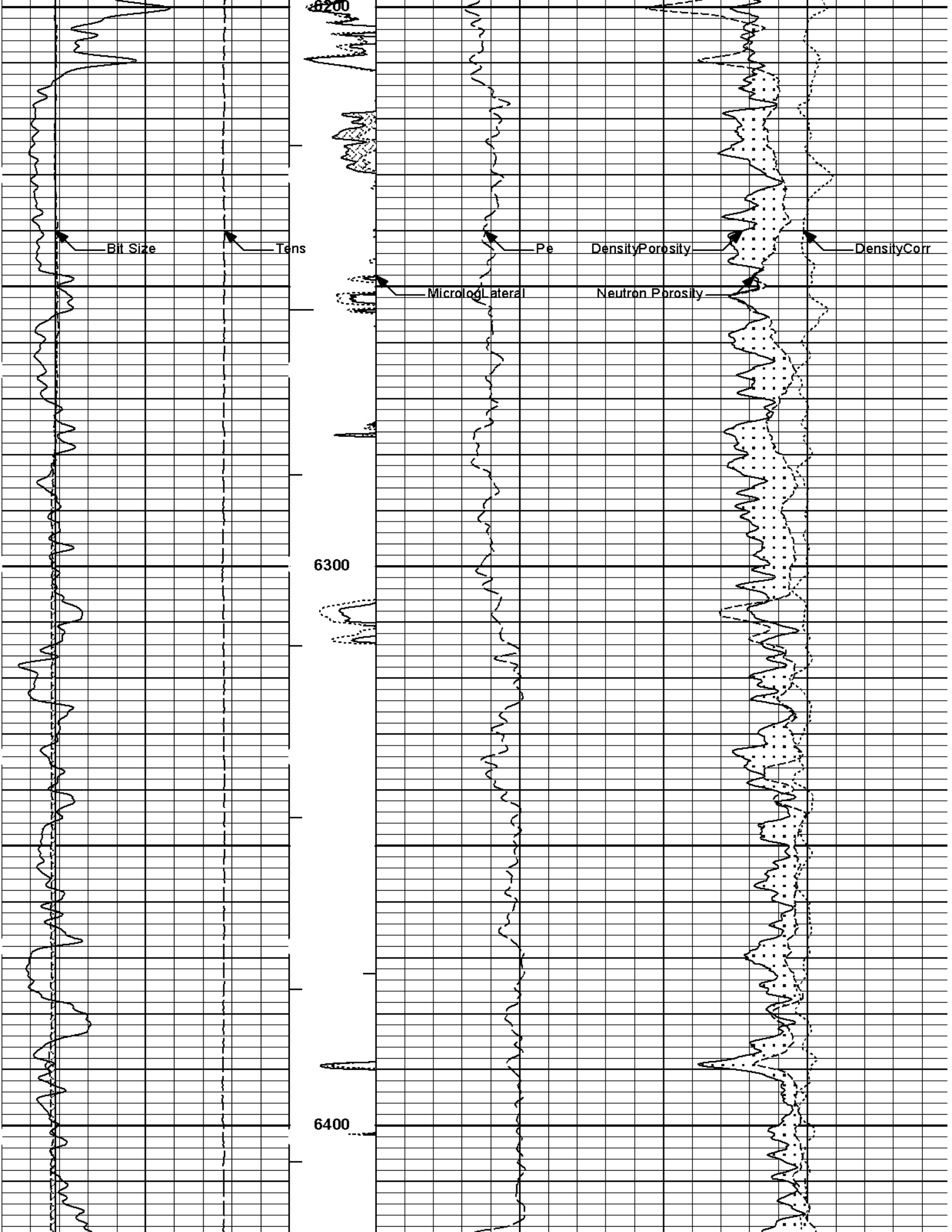
5 INCH MAIN LOG

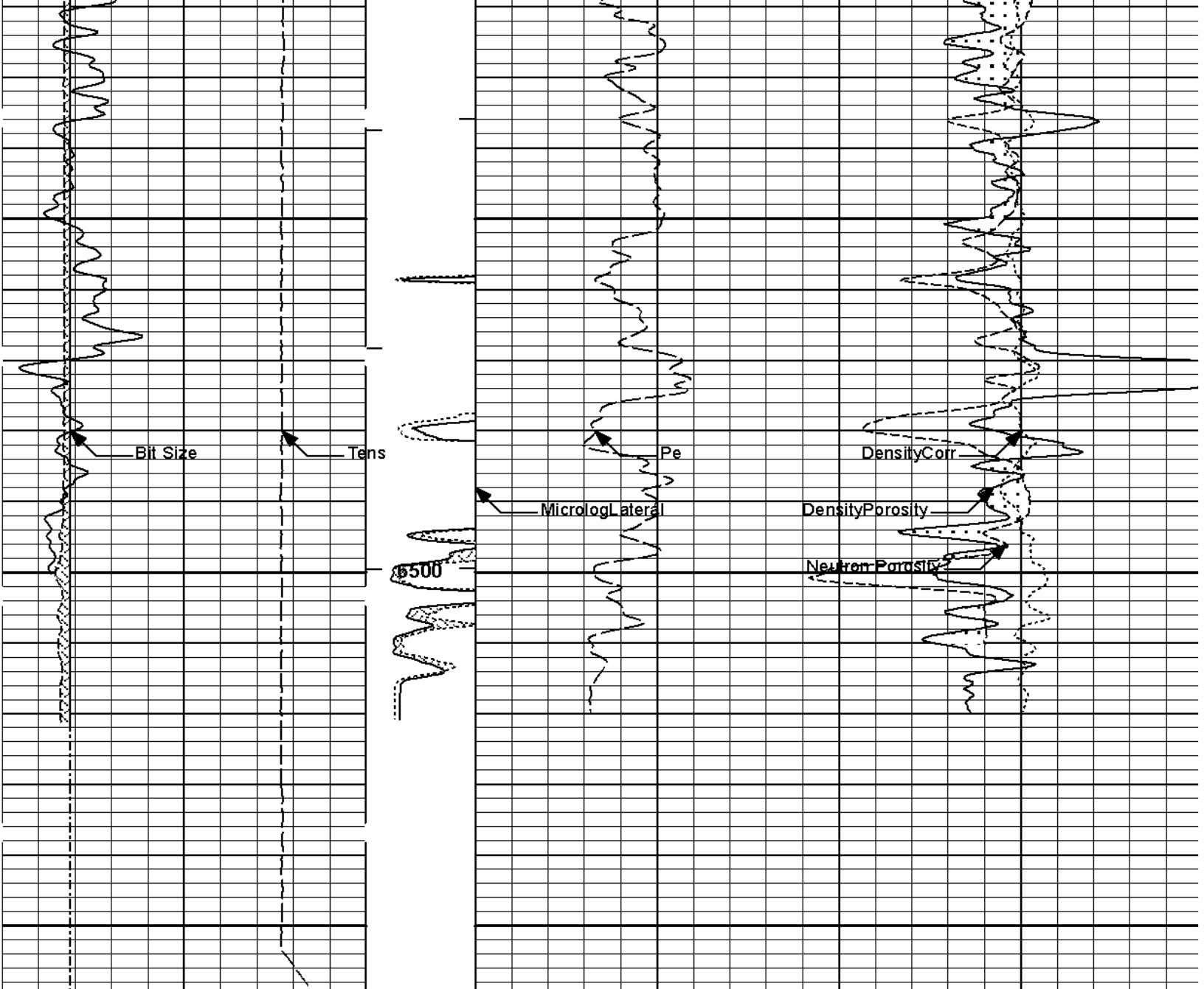
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Plot Time: 12-Jul-11 09:28:07
 Plot Range: 6170 ft to 6559.5 ft
 Data: GILLESPIE_21_1\Well Based\DAQ-0001-REPEAT
 Plot File: \\POROML\EOG_PoroML_5_repeat_IQ_LIB

REPEAT SECTION







15K	Tens	0	1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	pounds							DensityCorr	gram per cc
6	Caliper	16	MicrologNormal	30				DensityPorosity	-10
	inches		ohm-metre				%		
0	Gamma API	150	MicrologLateral	30				Neutron Porosity	-10
	api		ohm-metre				%		
SHALE			PERMEABLE	CROSSOVER					
6	Bit Size	16	AHVT						
	inches								
MUDCAKE			BHVT						

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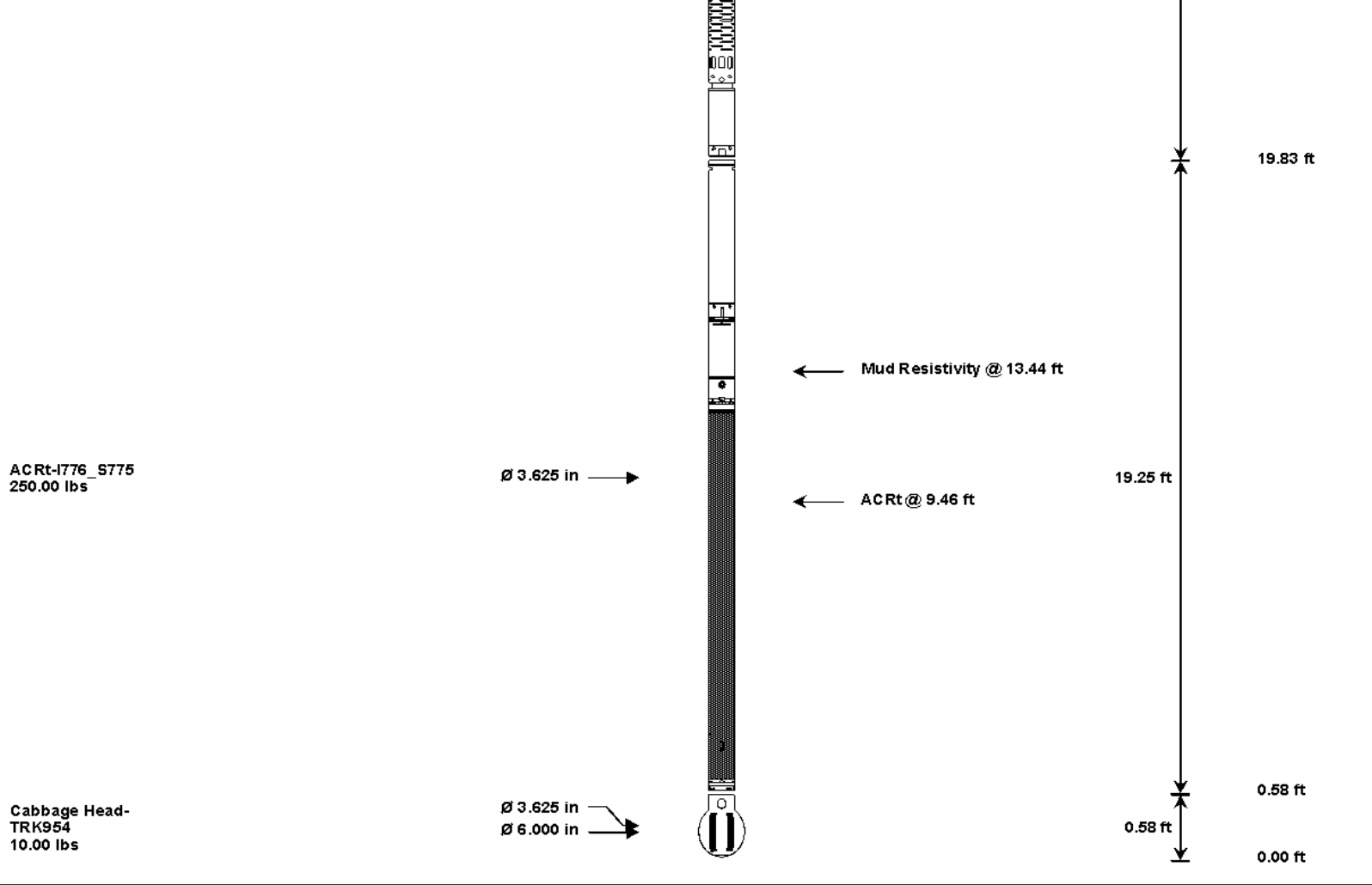
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 Plot Range: 6170 ft to 6559.5 ft
 Data: GILLESPIE_21_1\Well Based\DAQ-0001-REPEAT1
 Plot File: \PROML\EOG_PoroML_5_repeat_IQ_LB

REPEAT SECTION

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	70.28 ft
SP Sub-TRK954 60.00 lbs		Ø 3.625 in →		← SP @ 66.59 ft	3.74 ft	68.36 ft
GTET-10811258 165.00 lbs		Ø 3.625 in →		← GammaRay @ 58.56 ft	8.52 ft	64.63 ft
DSN Decentralizer- 11005605 6.60 lbs		Ø 3.625 in → Ø 3.625 in →		← DSN Far @ 49.17 ft ← DSN Near @ 48.42 ft	9.69 ft	56.10 ft
DSNT-10755066 174.00 lbs					10.81 ft	46.42 ft
SDLT- 1066_MB5803_P45 360.00 lbs		Ø 4.500 in → Ø 4.750 in →		← SDL Microlog @ 38.60 ft ← SDL Caliper @ 38.42 ft ← SDL @ 38.41 ft	15.77 ft	35.60 ft
BSAT-10747683 300.00 lbs		Ø 3.625 in →		← Sonic Receivers @ 27.09 ft		15.77 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head	PROT01	30.00	1.92	68.36	300.00
SP	SP Sub	TRK954	60.00	3.74	64.63	300.00
GTET	Gamma Telemetry Tool	10811258	165.00	8.52	56.10	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	46.42	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13 *	49.75	300.00
SDLT	Spectral Density Tool	1066_M85803_P45	360.00	10.81	35.60	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.83	60.00
ACRT	Array Compensated True Resistivity	1776_S775	250.00	19.25	0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58	0.00	300.00
Total			1,355.60	70.28		

* Not included in Total Length and Length Accumulation.

Data: GILLESPIE_21_110001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIDLE Date: 12-Jul-11 05:17:56

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PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.200	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm

SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
SHARED	RMUD	Mud Resistivity	1.060	ohm m
SHARED	TRM	Temperature of Mud	86.0	degF
SHARED	CSD	Logging Interval is Cased?	No	
SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	6550.00	ft
SHARED	BHT	Bottom Hole Temperature	140.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	NONE	
SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
SHARED	TEMM	Temperature Master Tool	NONE	
SHARED	BHSM	Borehole Size Master Tool	NONE	
Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.90	ohm m
Rwa / CrossPlot	TMFR	Rmf Ref Temp	85.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohm m
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position	Centered	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	DMA	Formation Density Matrix	2.710	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wyllie	
ACRT	RTOK	Process ACRT?	Yes	

ACRT	MNSO	Minimum Tool Standoff	1.50	in
ACRT	TCS1	Temperature Correction Source	FP Lwr & FP Up	
ACRT	TPOS	Tool Position	Free Hanging	
ACRT	RMOP	Rmud Source	Mud Cell	
ACRT	RMIN	Minimum Resistivity for MAP	0.20	ohm m
ACRT	RMIN	Maximum Resistivity for MAP	200.00	ohm m
ACRT	THQY	Threshold Quality	0.50	

BOTTOM

Data: GILLESPIE_21_110001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIDLE

Date: 12-Jul-11 08:13:25

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Depth Panel	Delay (ft)	Filter Type	Filter Length (ft)
TENS	Tension		0.00	NO	
SP Sub					
PLTC	Plot Control Mask		66.58	NO	
SP	Spontaneous Potential		66.58	BLK	1.250
SPR	Raw Spontaneous Potential		66.58	NO	
SPO	Spontaneous Potential Offset		66.58	NO	
GTET					
TPUL	Tension Pull		58.56	NO	
GR	Natural Gamma Ray API		58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API		58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution		58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z		0.00	BLK	0.083
DEVI	Inclination		0.00	NO	
DSNT					
TPUL	Tension Pull		48.32	NO	
RNDS	Near Detector Telemetry Counts		48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts		49.17	TRI	0.583
DNTT	DSN Tool Temperature		48.42	NO	
DSNS	DSN Tool Status		48.32	NO	
ERND	Near Detector Telemetry Counts EVR		48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR		49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR		48.42	NO	
SDLT					
TPUL	Tension Pull		38.41	NO	
NAB	Near Above		38.24	BLK	0.920
NHI	Near Cesium High		38.24	BLK	0.920
NLO	Near Cesium Low		38.24	BLK	0.920
NVA	Near Valley		38.24	BLK	0.920
NBA	Near Barite		38.24	BLK	0.920
NDE	Near Density		38.24	BLK	0.920
NPK	Near Peak		38.24	BLK	0.920
NLI	Near Lithology		38.24	BLK	0.920
NBAU	Near Barite Unfiltered		38.24	BLK	0.250
NLUU	Near Lithology Unfiltered		38.24	BLK	0.250

NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920
NHV	Near Detector High Voltage	35.60	NO	
FHV	Far Detector High Voltage	35.60	NO	
ITMP	Instrument Temperature	35.60	NO	
DDHV	Detector High Voltage	35.60	NO	
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750

BSAT

TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	

ACRT

TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000

F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

Data: GILLESPIE_21_110001 SP-GTET-DSN-SDL-BSAT-ACRT-CHMIDLE

Date: 12-Jul-11 08:13:38

COMPANY	EOG RESOURCES		
WELL	GILLESPIE 21 #1		
FIELD	WILLIS		
COUNTY	STEVENS	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON MICROLOG	